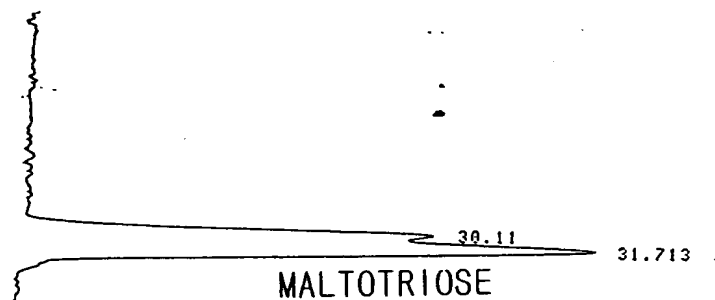


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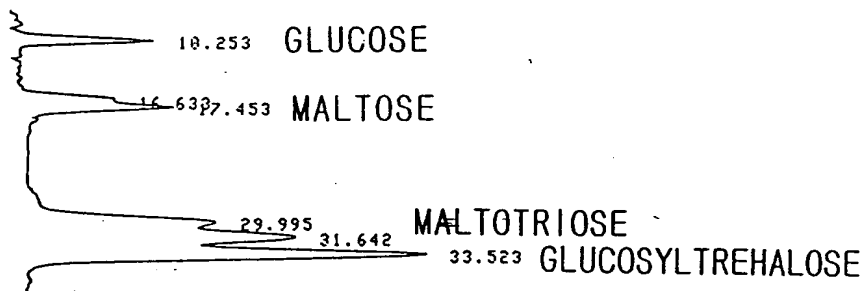
BEFORE REACTION

FIG. 1A



AFTER REACTION

FIG. 1B



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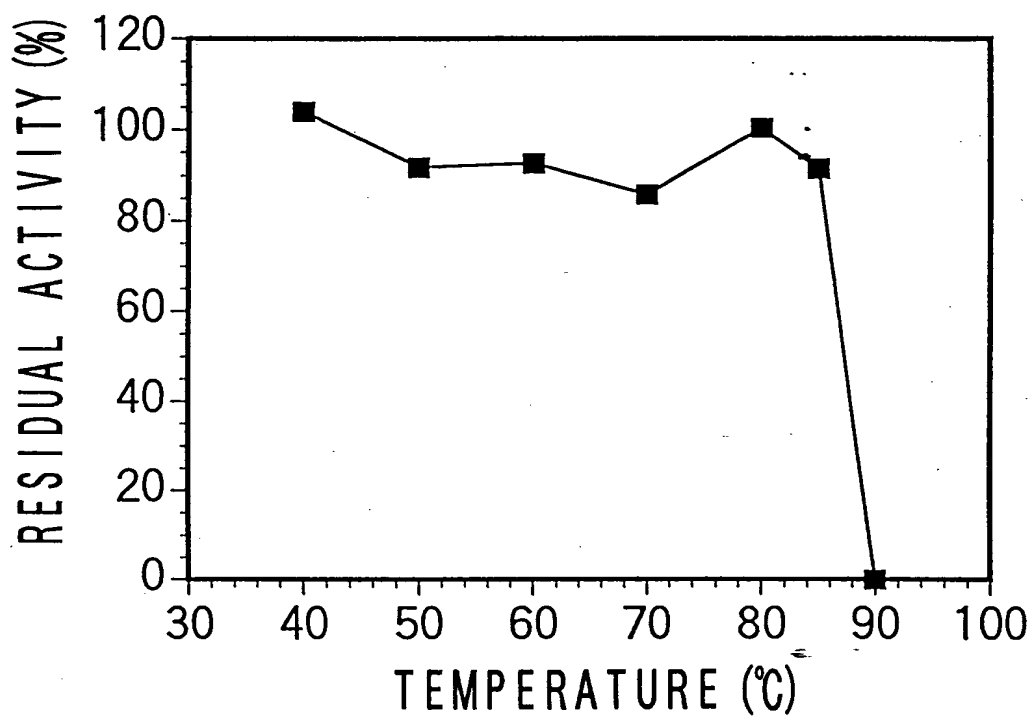


FIG. 2

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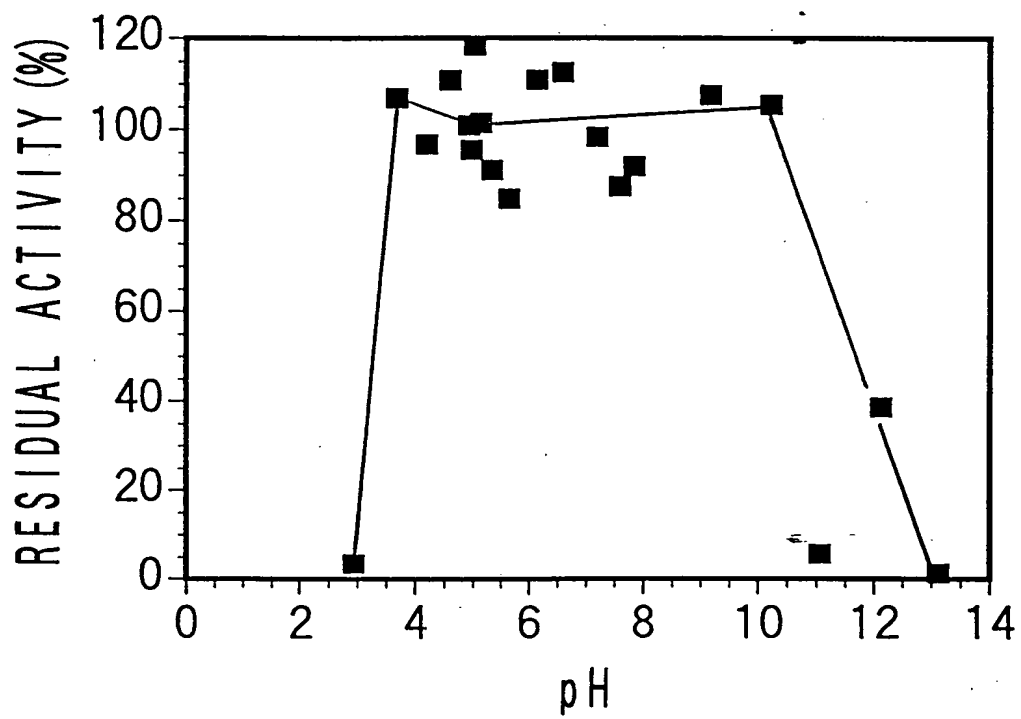


FIG. 3

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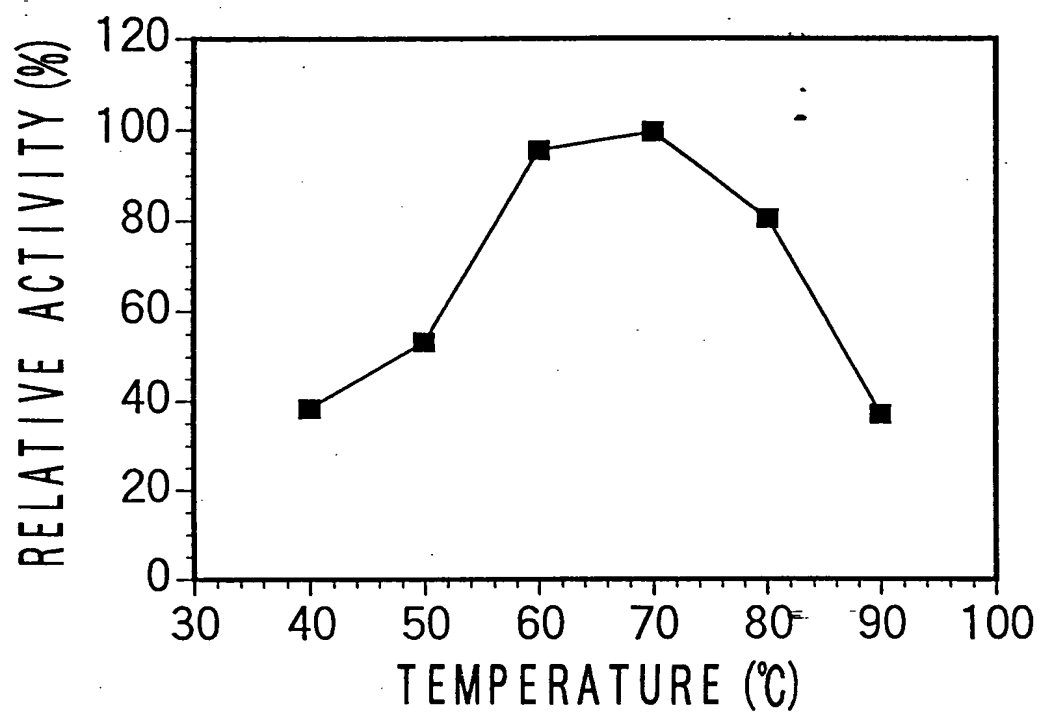


FIG. 4

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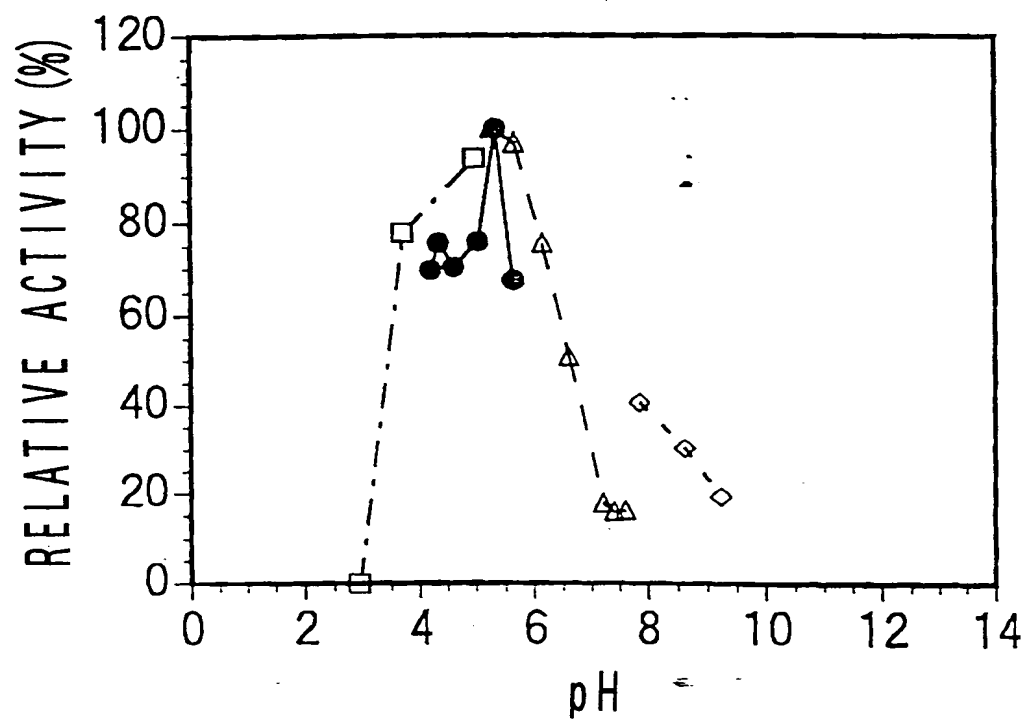


FIG. 5

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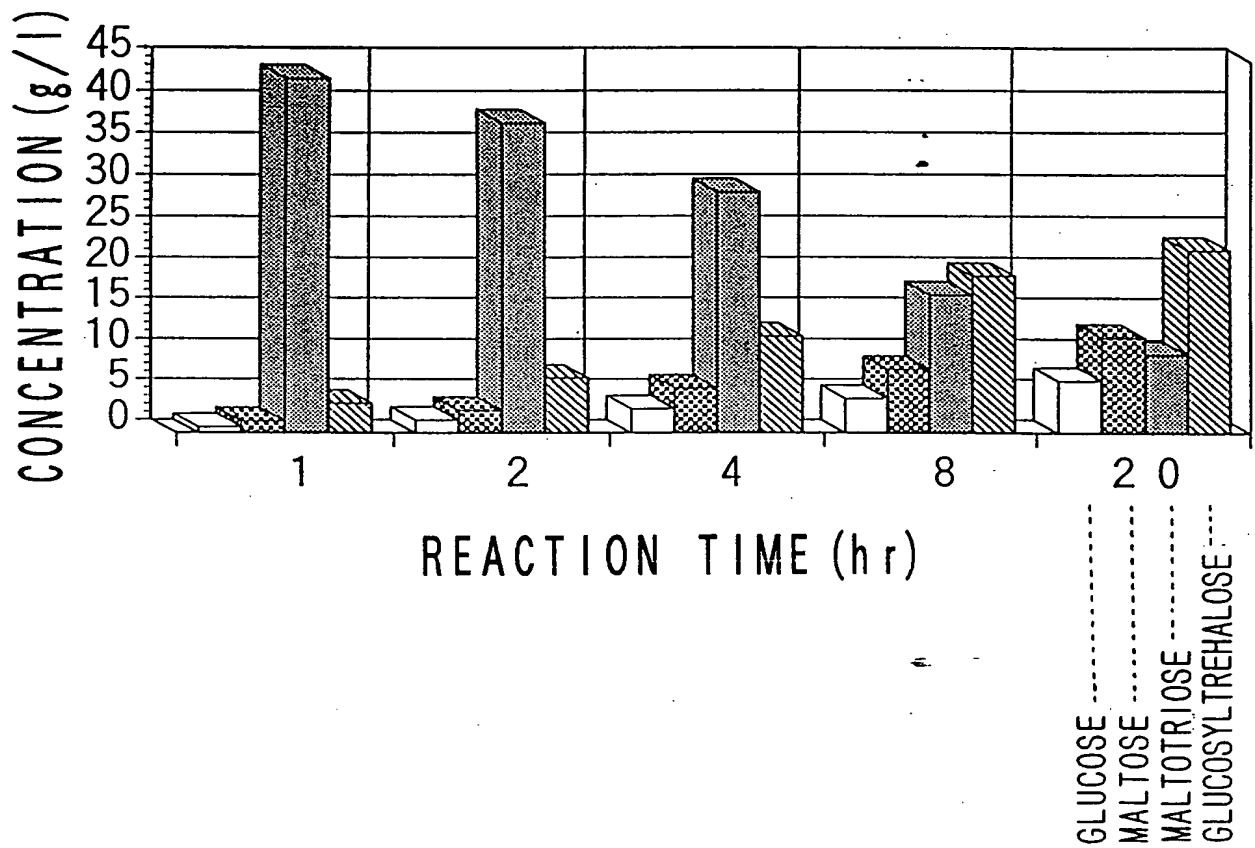


FIG. 6

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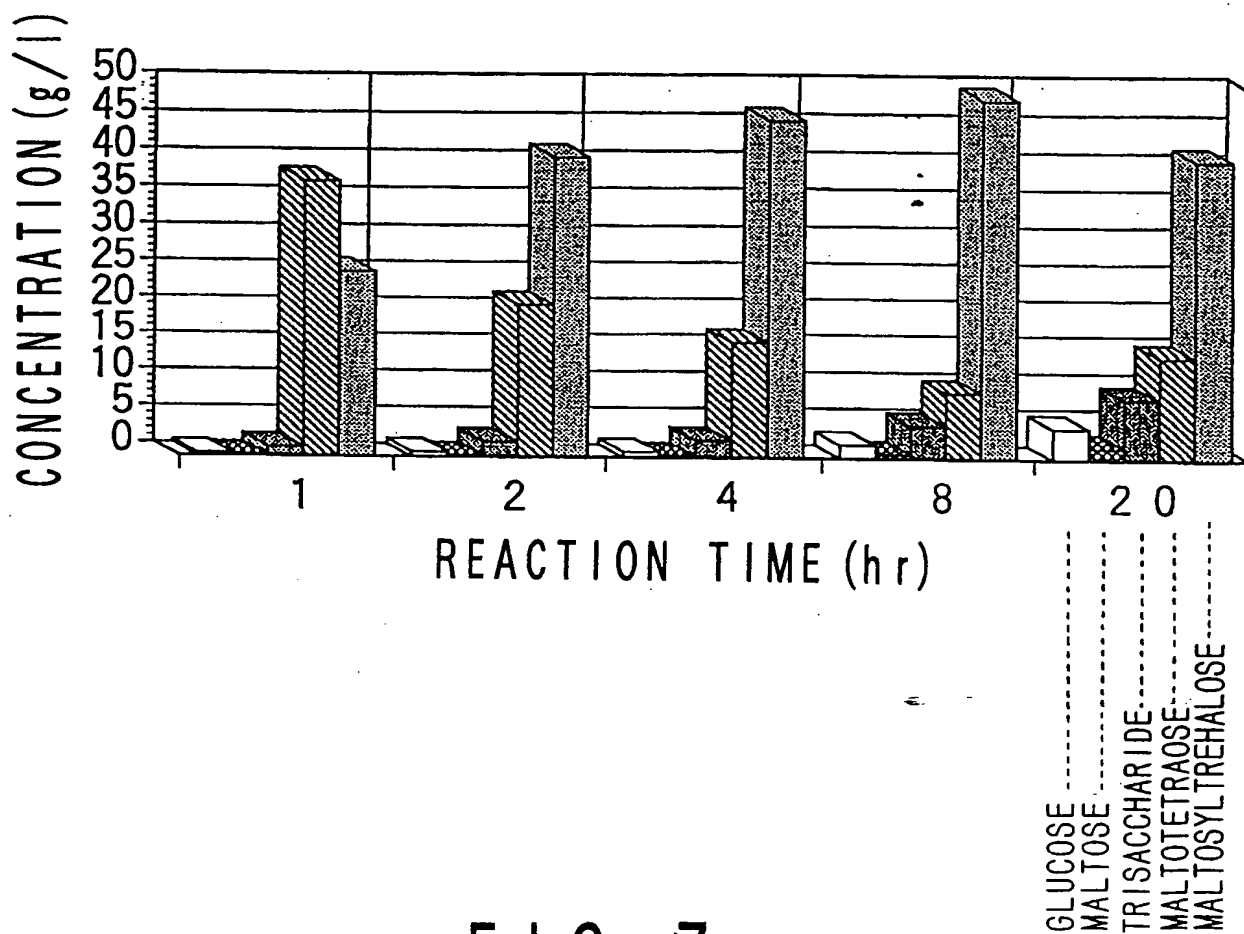


FIG. 7

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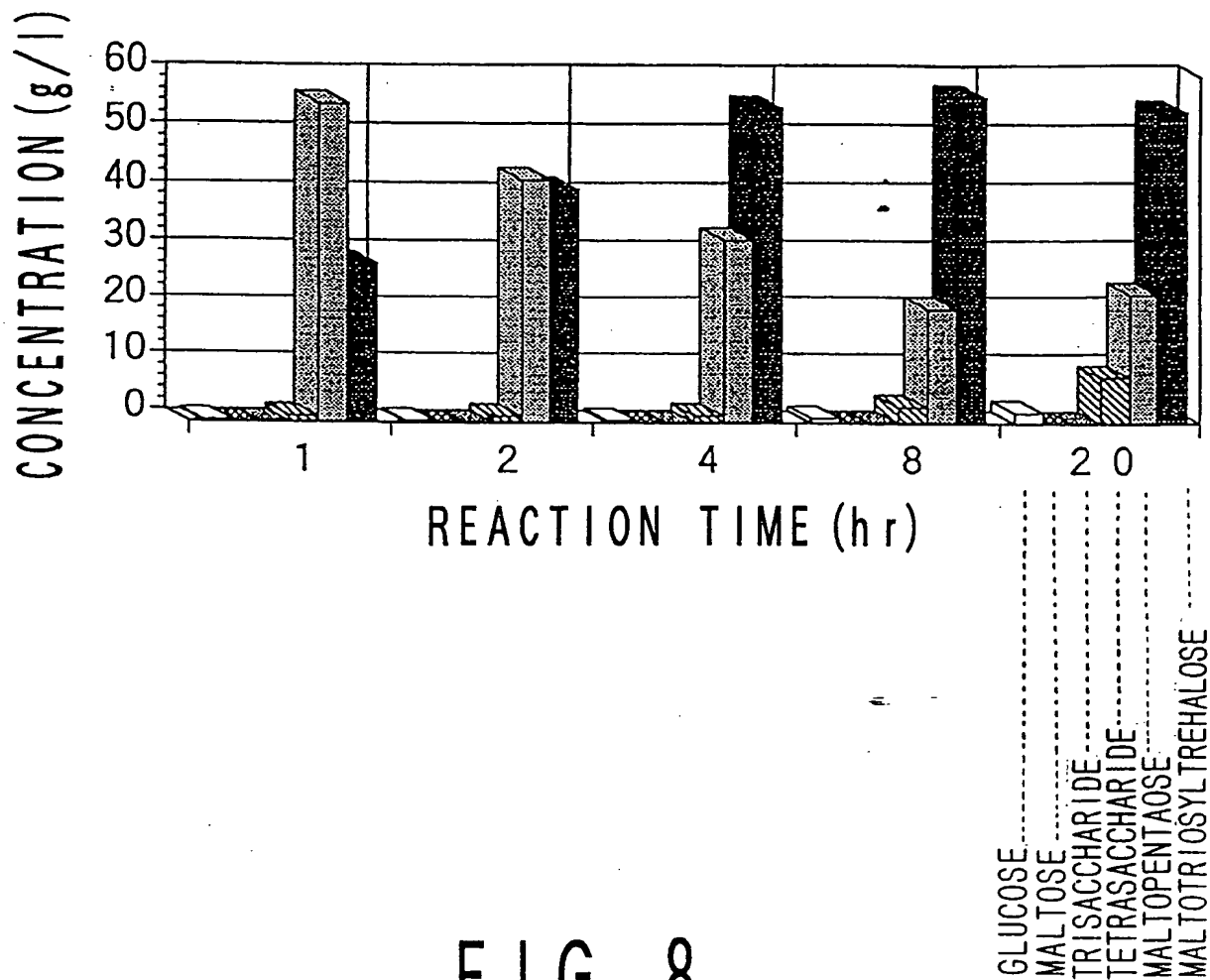


FIG. 8



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REACTION PRODUCT

FIG. 9A

..... 8.61 HEPTASACCHARIDE  
..... 9.28 HEXASACCHARIDE  
..... 10.08 PENTASACCHARIDE  
..... 11.12 TETRASACCHARIDE  
..... 12.45 TRISACCHARIDE  
..... 14.52 DISACCHARIDE  
..... 16.64 MONOSACCHARIDE

CONTROL  
(HYDROLYSATE ONLY BY AMYLASE)

FIG. 9B

..... 8.91 HEPTASACCHARIDE  
..... 9.61 HEXASACCHARIDE  
..... 10.53 PENTASACCHARIDE  
..... 11.63 TETRASACCHARIDE  
..... 12.93 TRISACCHARIDE  
..... 14.51 DISACCHARIDE  
..... 16.48 MONOSACCHARIDE

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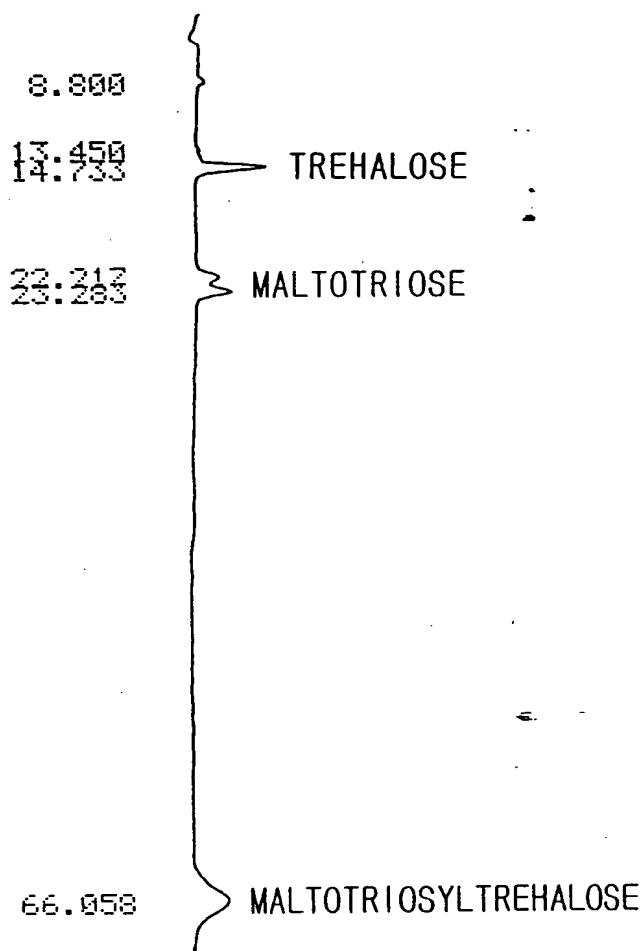


FIG. 10

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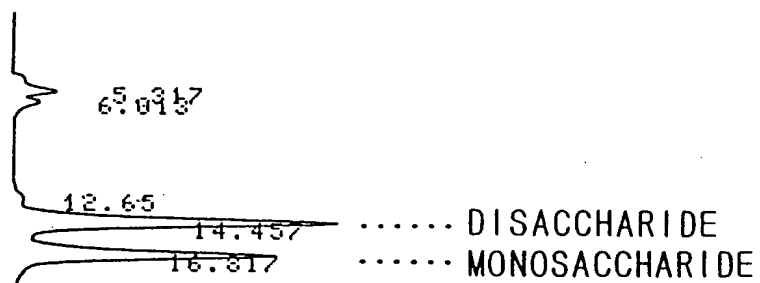


FIG. 11

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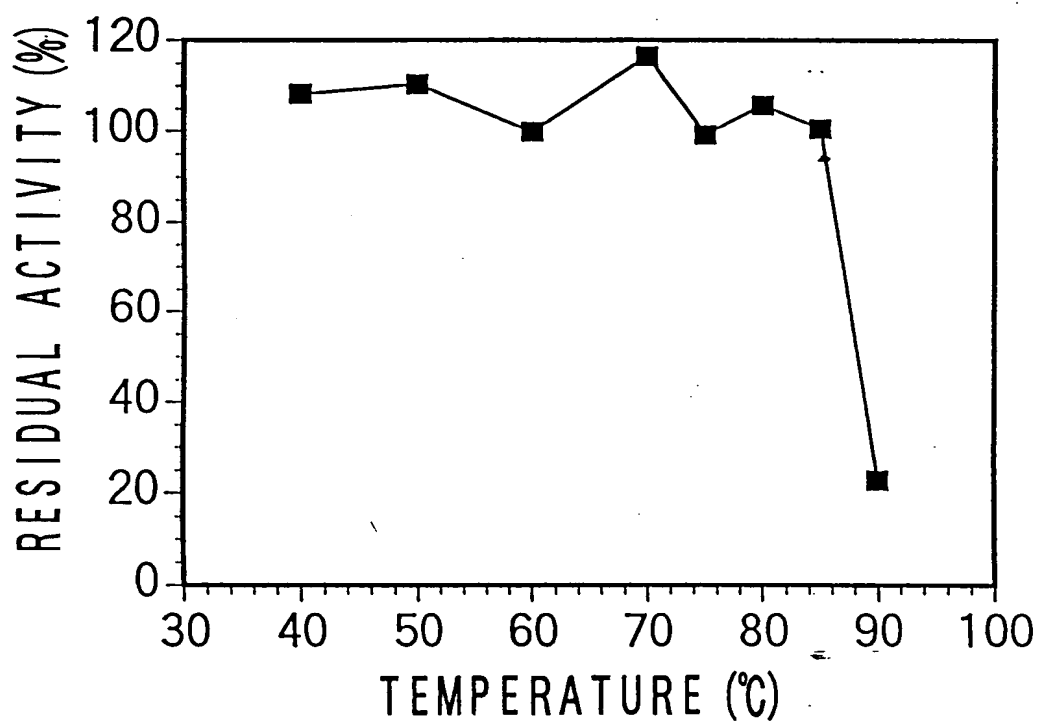


FIG. 12

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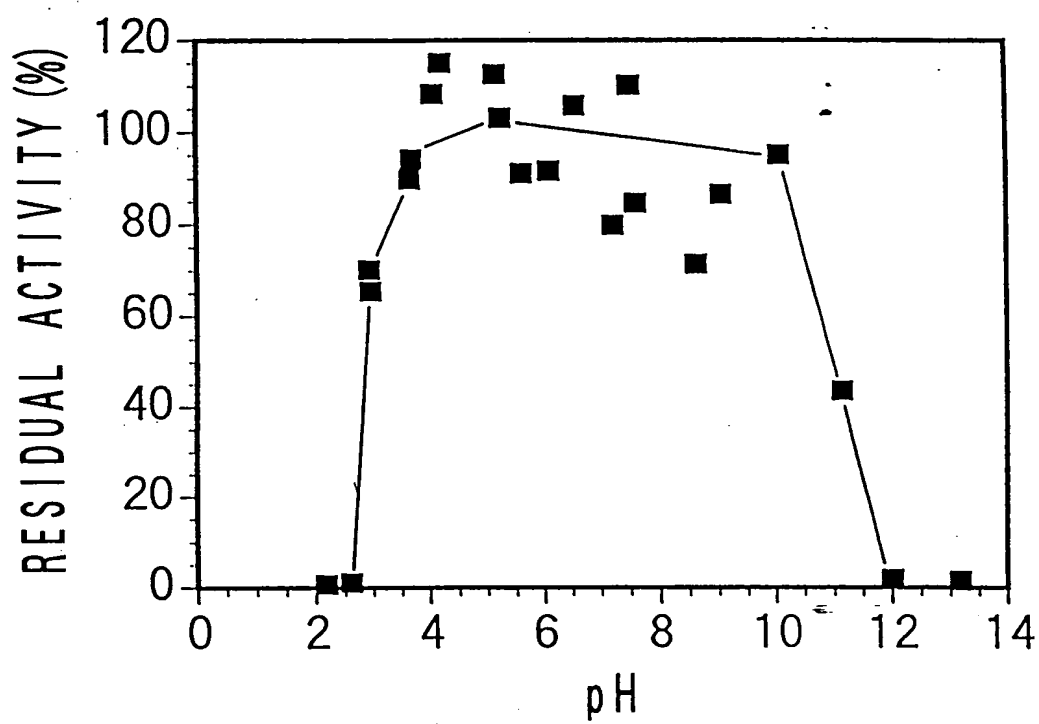


FIG. 13

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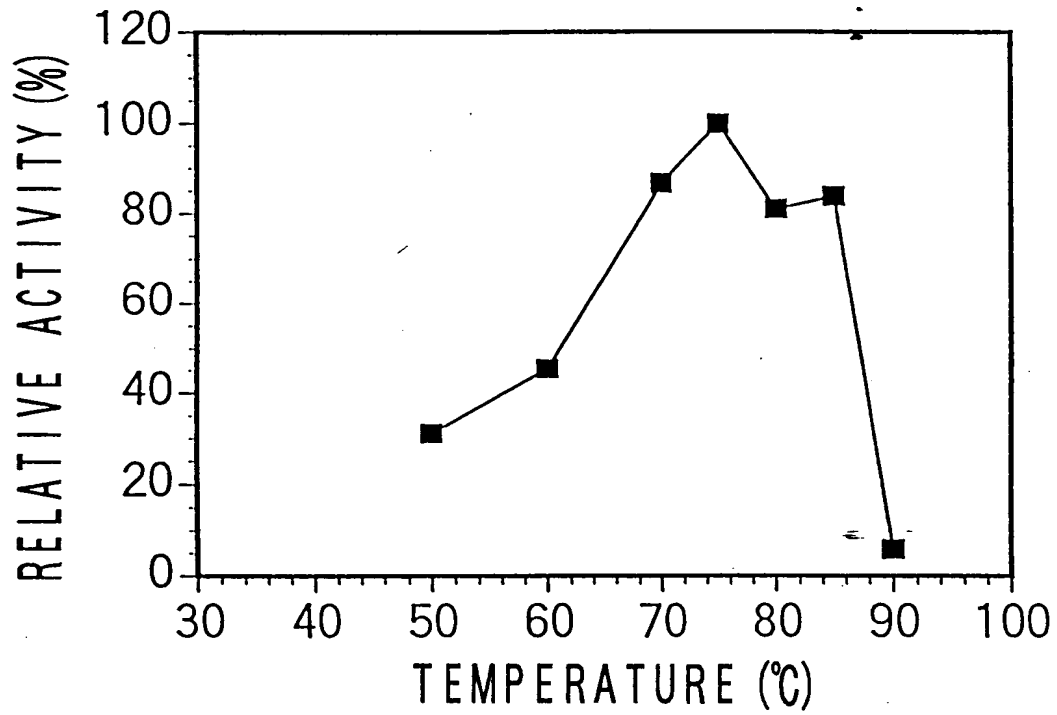


FIG. 14

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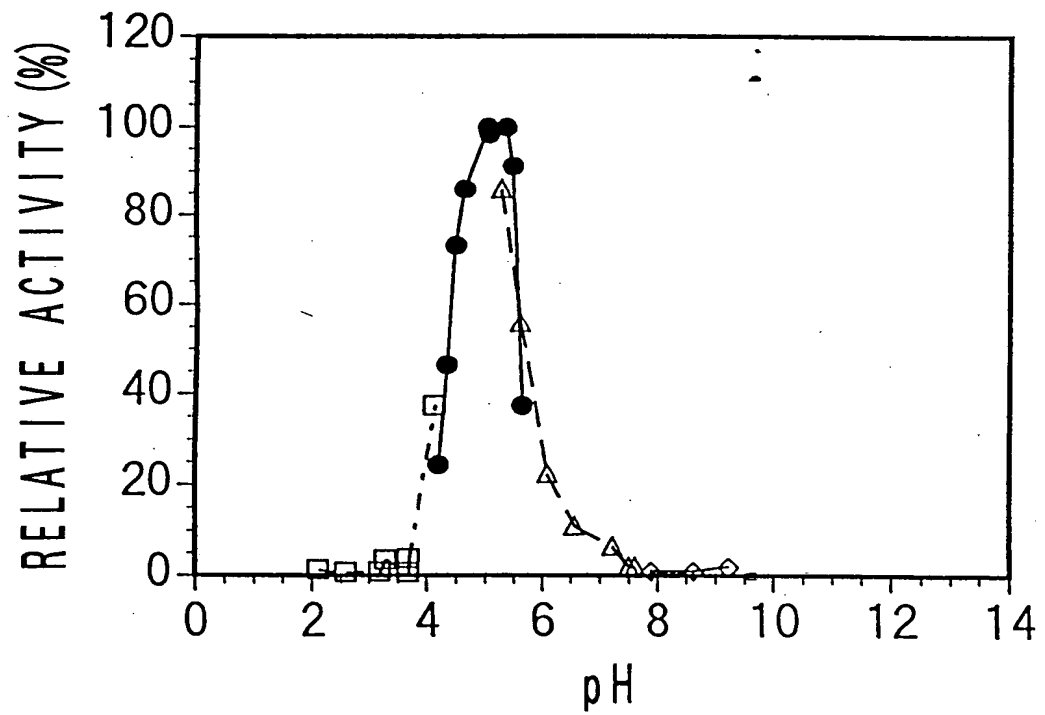


FIG. 15

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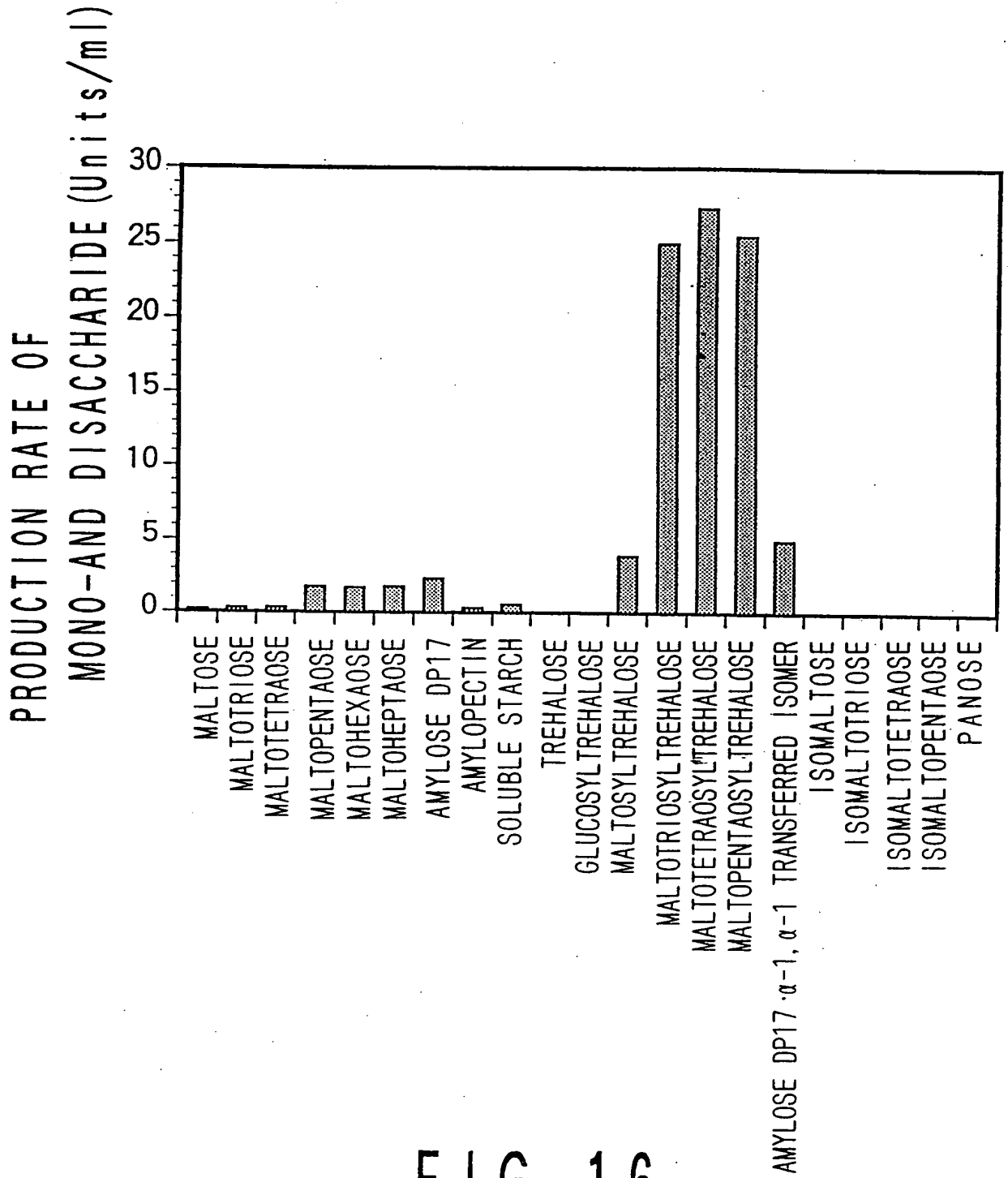


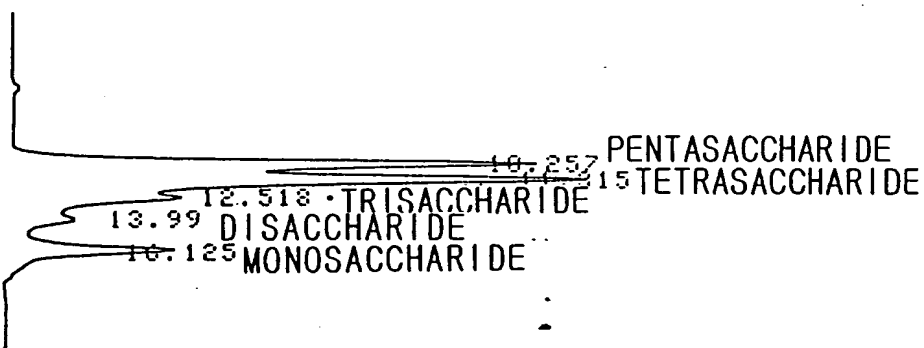
FIG. 16



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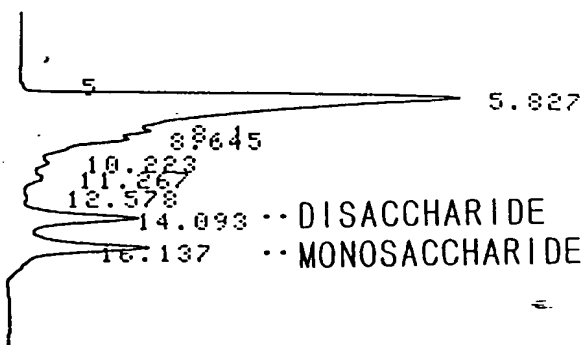
SUBSTRATE: MALTOPENTAOSE

FIG. 17A



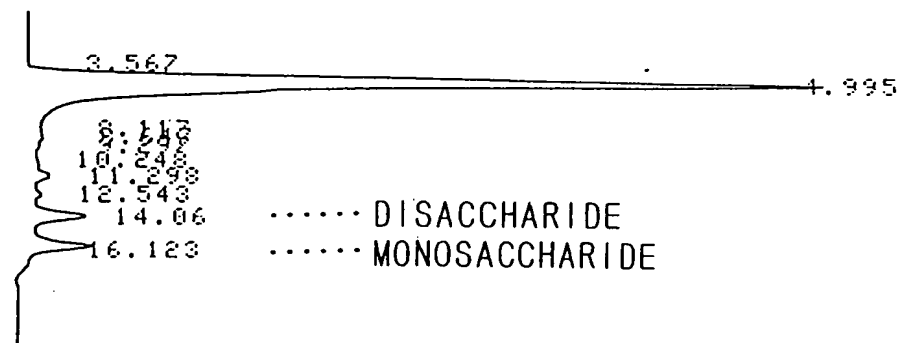
SUBSTRATE: AMYLOSE DP17

FIG. 17B



SUBSTRATE: SOLUBLE STARCH

FIG. 17C



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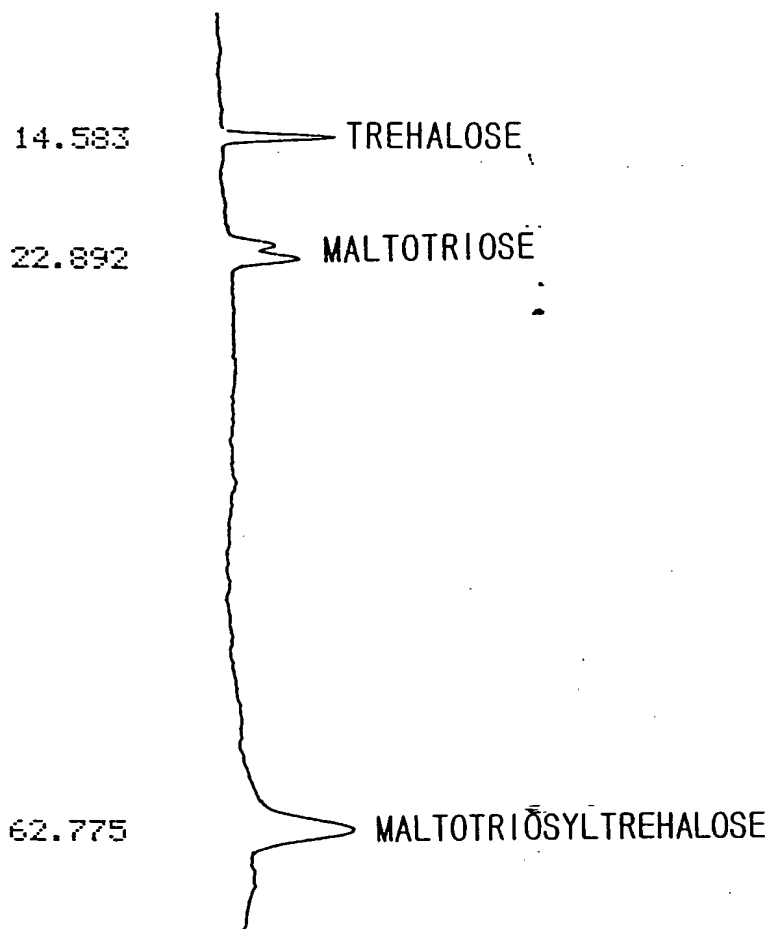


FIG. 18

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14.608

TREHALOSE

59.683  
62.325

MALTOPENTAPOSE

MALTOPENTAOSYL TREHALOSE

FIG. 19

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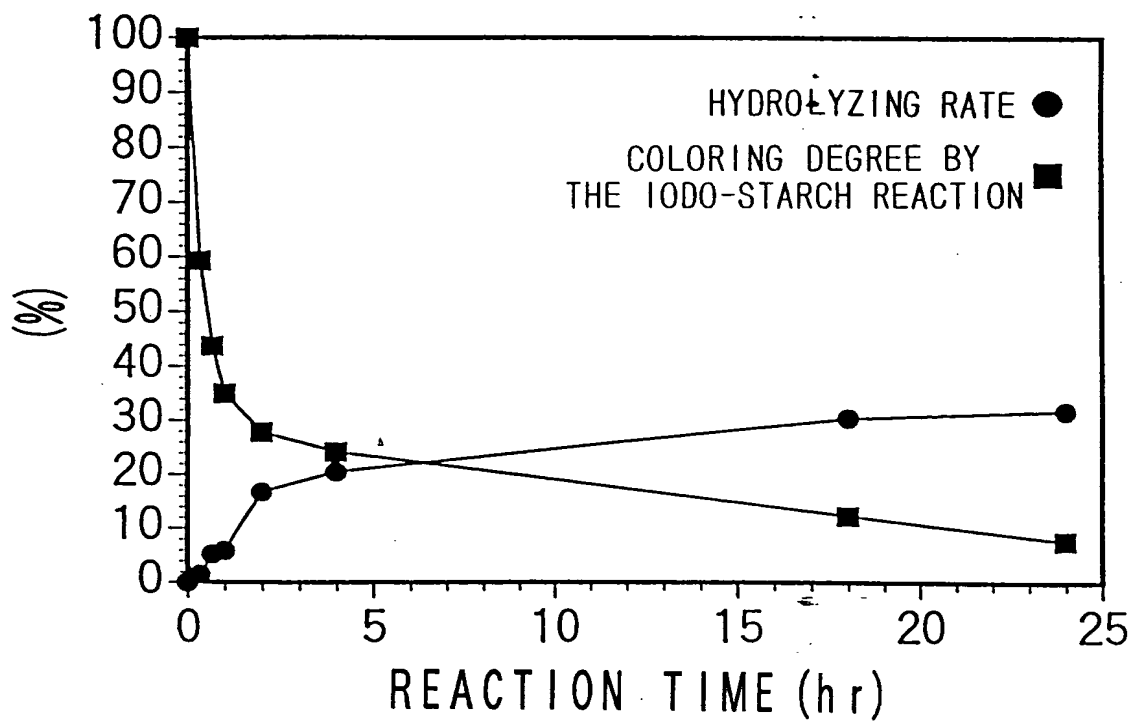


FIG. 20

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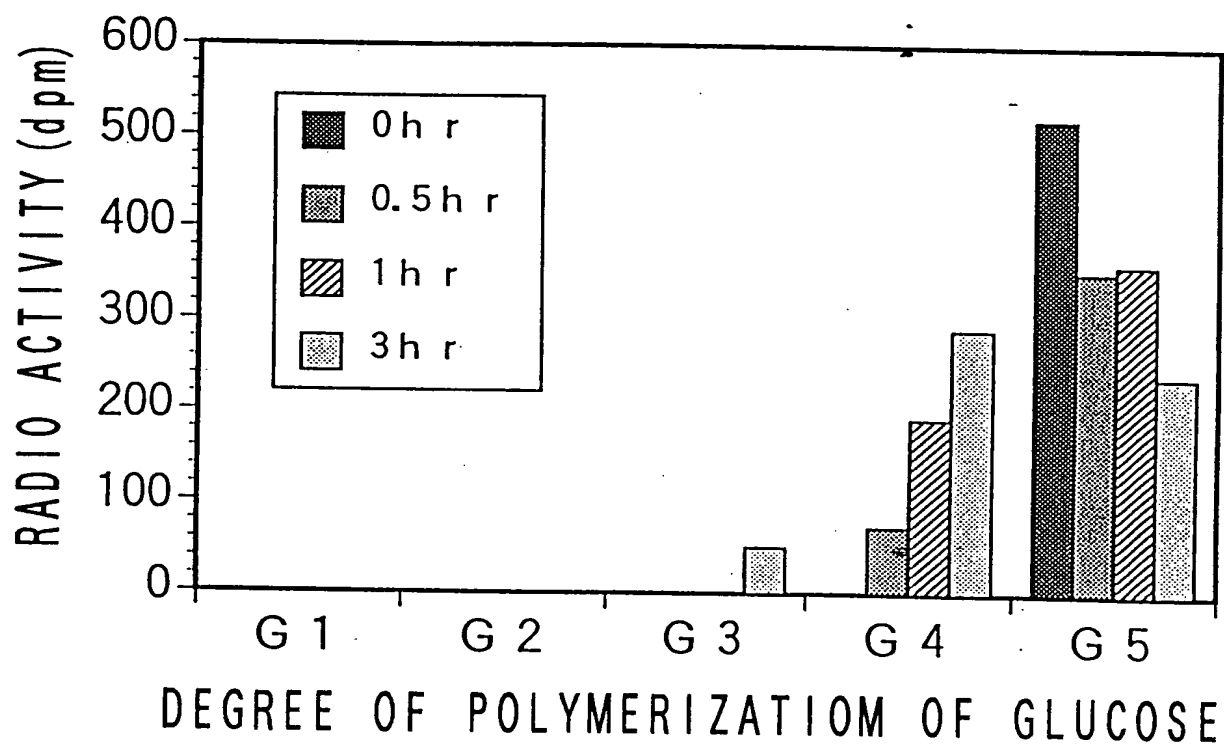


FIG. 21

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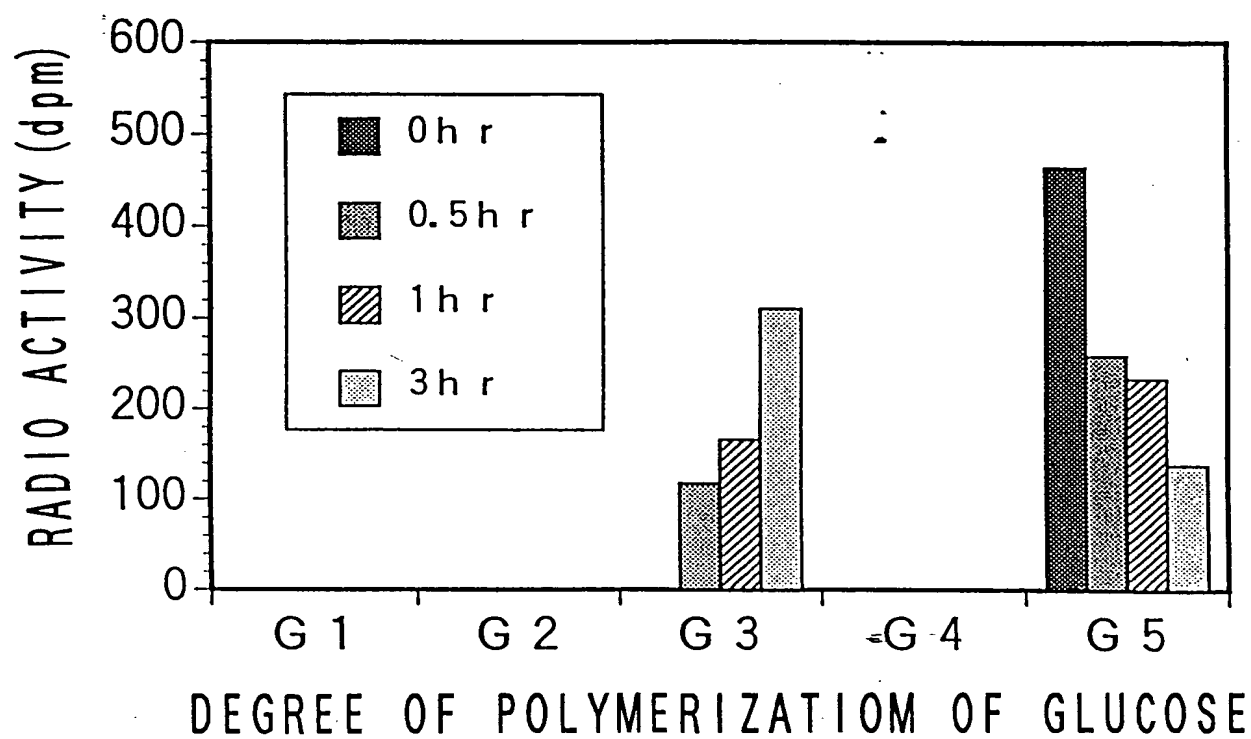


FIG. 22

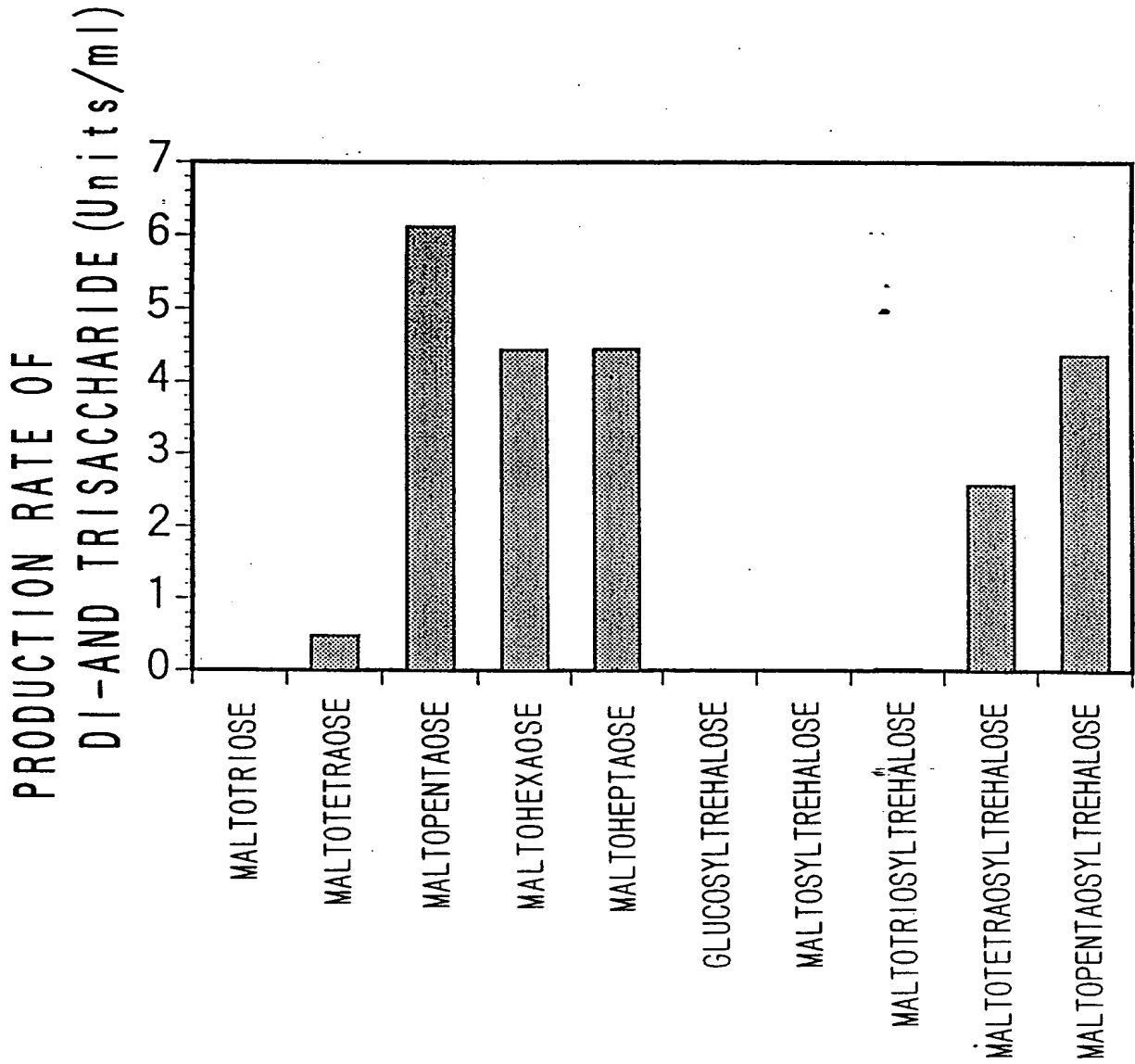


FIG. 23

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13.942

MALTOSE

20.517  
21.517

MALTOTRIOSE

33.992  
36.025

MALTOSYLTREHALOSE

135.975

MALTOPENTAOSYLTREHALOSE

FIG. 24



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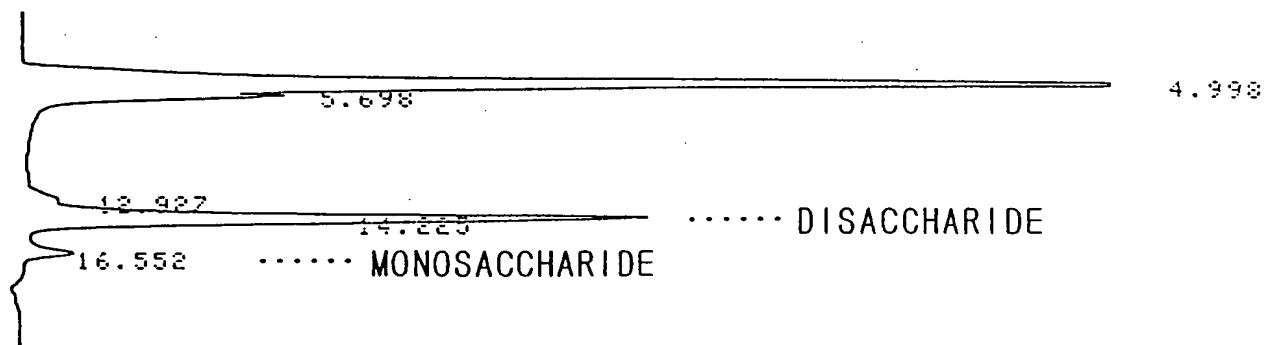


FIG. 25

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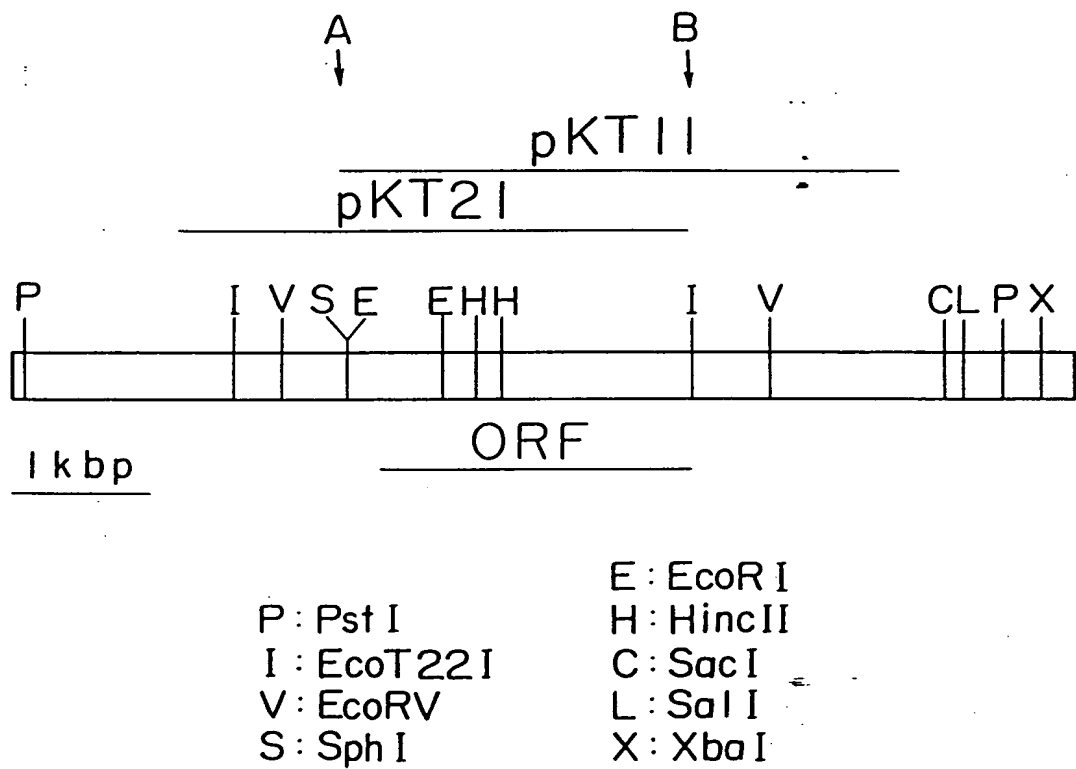


FIG. 26

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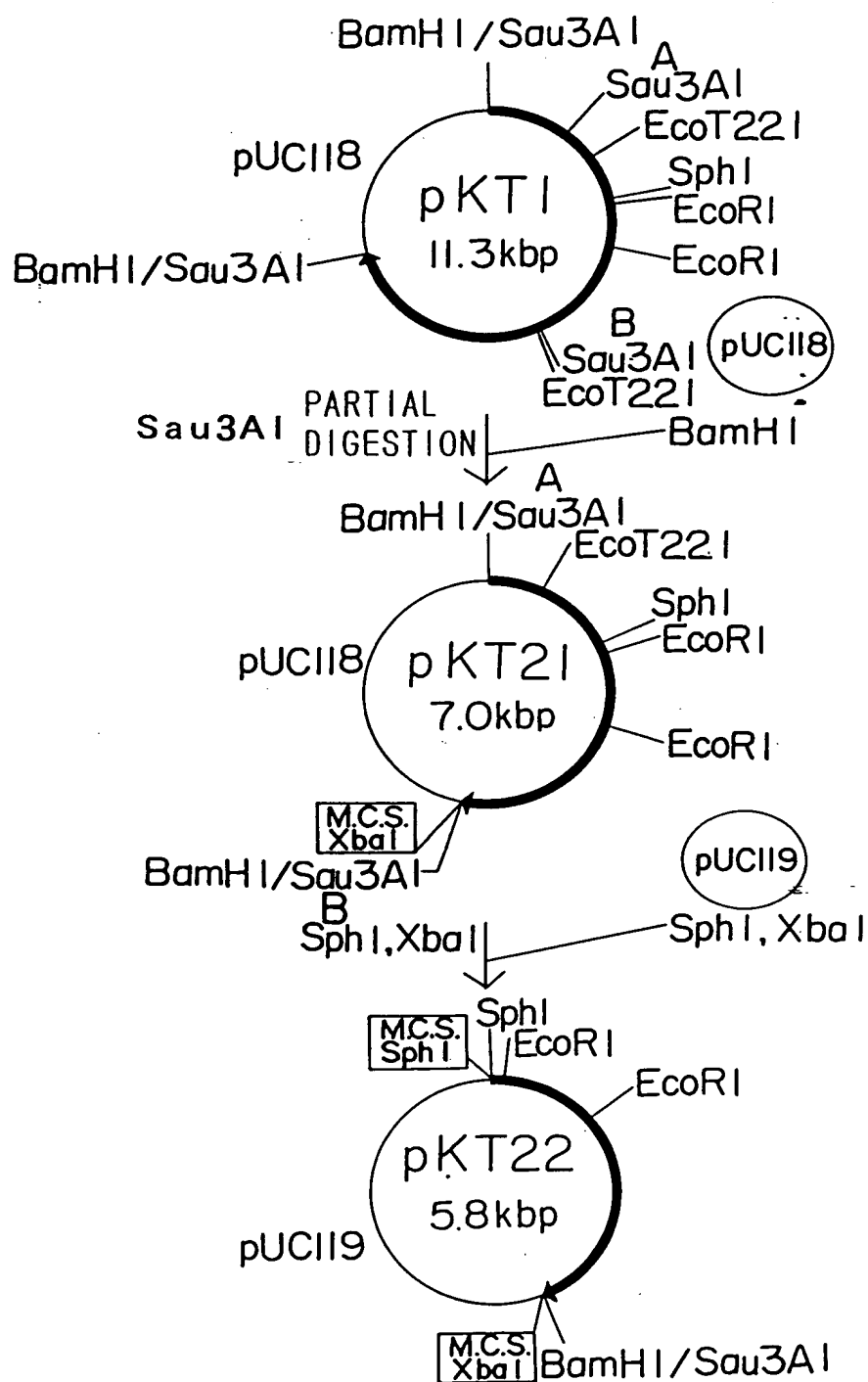
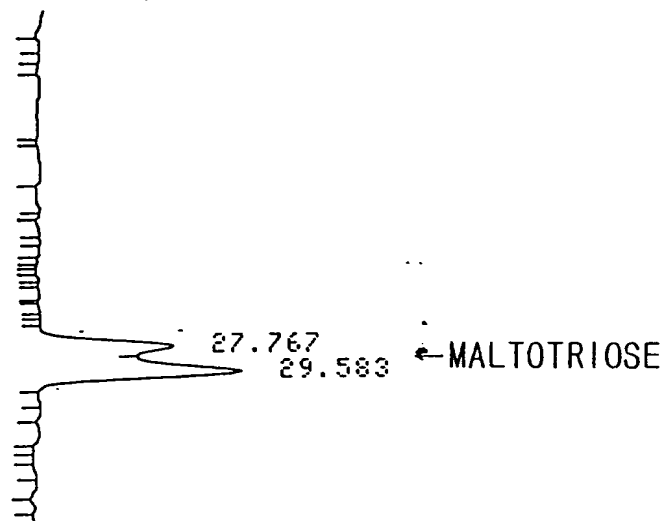


FIG. 27

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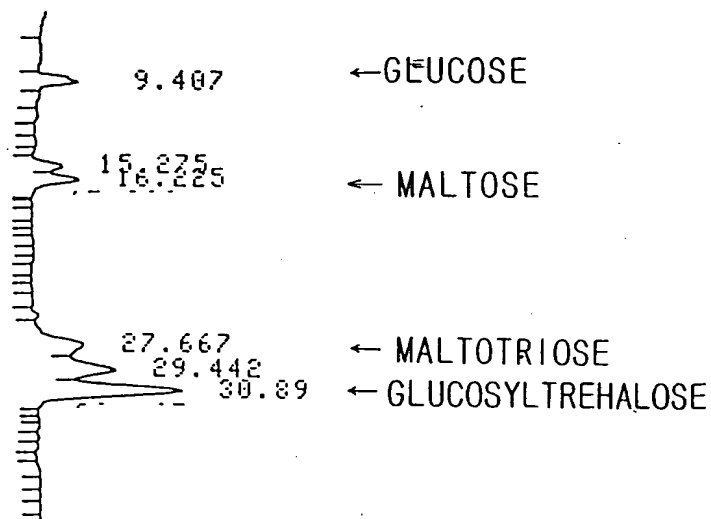
BEFORE ADDITION OF CRUDE ENZYME EXTRACT

FIG. 28A



AFTER ADDITION OF CRUDE ENZYME EXTRACT

FIG. 28B



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p09T1 INSERTED FRAGMENT

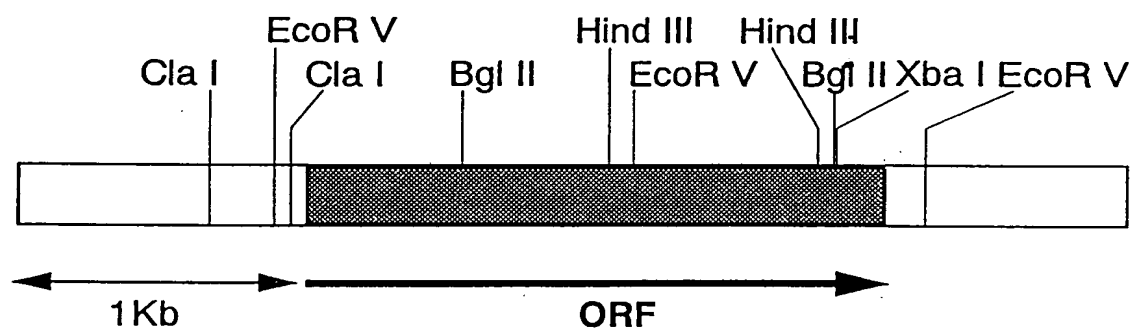
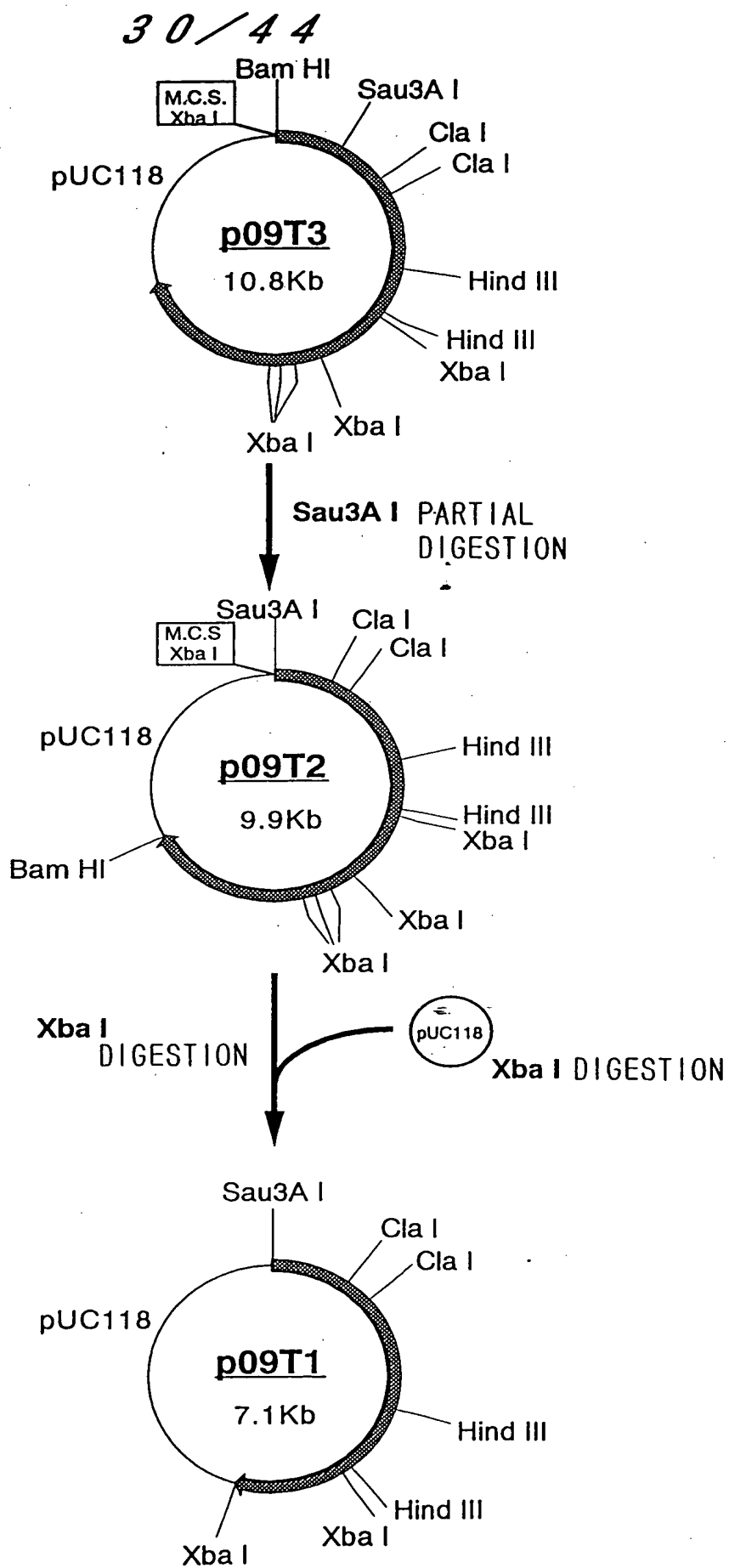


FIG. 29

FIG. 30



[illegible]

FIG. 31

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816' ATGGCTTCGCCAGGAAGTA-ACCATGGGTACGATGTAA  
 \* \* \* \* \*  
 455" AAGGCTAGACCAGGGAGCACTCACGGCTACG--ATGTAGTAGATCAT-AGTGAAATTAAT  
 853' TAGATCATTCAAGGATAAACGATGAAC-TTGGAGGAG--AGAAAAGATACAGGAGATTA  
 \* \* \* \* \*  
 512" GAGGAATTAGGAGGAGAAGAGGGGTGCTTTAACTAGTTAAGGAAGCTAAGAGTAGAGGT  
 909' ATAGAGACAGCTCATACTATTGGATTAGGTATTAT-ACAGGACATAGTACCAAAT-CACA  
 \* \* \* \* \*  
 572" TTAGAAATCATACAAGATATAGTGCCAAATCATATGGCGGTACATCATACTAATTGGAGA  
 967' TGGCTGTAAATTCTCTA-AATTGG-CGACTAATGGATGTATTAATAATGGGTAAAAAGAG  
 \* \* \* \* \*  
 632" CTTATGGATCTGTTAAAGAGTTGGAAGAATAGTAAATACTATACTATT-TTGATCACTA  
 1025' TAAATATTATACGTACTTTGACTTTTTCCAGAAGATGA-TAAGATACGATTACCCATAT  
 \* \* \* \* \*  
 691" CGATGATGACAAGATAATCCTCCCAATACTTGAGGACGAGTTGGATACCGTT--ATAGAT  
 1084' TAGGAGAAGATTTAGATACAG--TGATAAGTAAAGGTTTATTAAGATAGTAAAGATGG  
 \* \* \* \* \*  
 749" AAGGGATTGATAAACTACAGAAGGATAATATAGAGTACAG-AGGGCTTATATTACCTAT  
 1142' AGATGAATATTTCTAGAATATTTCAAATGGA--AACT--TCCTCTAACAGAGGTTGGAA  
 \* \* \* \* \*  
 808" AAATGATGAAGGAGTTGAATTCTTGAAAAGGATTAATTGCTTTGATAATTCATGTTTAA  
 1198' -----ATGATATATACGACACTTTACAAAAACAGAAATTATACCTAATGTCTTGGAA---  
 \* \* \* \* \*  
 868" GAAAGAGGATATAAAGAAATTACTATTAATACAATATTATCAGCTAATTAAGGAAGAA  
 1250' AAATCCTCCTAGCTATAGACGATTCTTCGATGTTAATACTTTAATAGGAGTAAATGTCGA  
 \* \* \* \* \*  
 928" AGGTTATCCAACTATAGGAGATTTTCGCAGTAAATGATTTGATAGCTGTTAGGGTAGA  
 1310' AAAAGATCACGATTTTCAAGAGTCCCATTCAAAGATCTTAGATTTAGATGTTGATGGCTA  
 \* \* \* \* \*  
 988" ATTGGATGAAGTATTTAGAGAGTCCCATGAGATAATTGCTAAGCTACCAGTTGACGGTTT  
 1370' TAGAATTGATCATATTGATGGATTATATGATCCTGAGAAATATATTAATGACCT--GA-G  
 \* \* \* \* \*  
 1048" AAGAATTGACCACATAGATGGACTATATAACCCTAAGGAGTATTTAGATAAGCTAAGACA  
 1427' GTCAATAATTAATAAATAAATAATTATTGTAGAAAAATTTCTGGGATTTGAGGAGGAATT  
 \* \* \* \* \*  
 1108" GTTAGTAGGAAATGATAAGATAATATACGTAGAGAAGATATTGTCAATCAACGAGAAATT  
 1487' AA-----AATTAAATTCAGATGGAACCTACAGGATATGACTTCTTAAATTAATCCTCAACT  
 \* \* \* \* \*  
 1168" AAGAGATGATTGGAAGTAGATGGGACTACTGGATATGATTTCTTGAACCTACGTTAATAT  
 1541' ACTGTT--TA-ATTTTAAATCAAGA-GA-TAATGGAC-AGTATATATGAGAATTTACAGC  
 \* \* \* \* \*  
 1228" GCTATTAGTAGATGGAAGTGGTGAGGAGGAGTTAACTAAGTTTTATGAGAATTTCAATTGG  
 1595' GGAGAAAAATCTATAAGTGAAAGTATAAAGAAAAATAAAGCGCAAATAATTGATGAGCT  
 \* \* \* \* \*  
 1288" AAGGAAAAATCAATATAGACGAGTTAATAATACAAAGTAAAAAATTAGTTGCAATCAGTT  
 1655' ATTTAGTTATGAAGTTAAAAAGATTAGCATCACAACCTAGGAATTAGCTACGATATATTGAG  
 \* \* \* \* \*  
 1348" ATTTAAAGGTGACATTGAAAGATTAAGCAAGTTACTGAACGTTAATTACGAT-TATTTAG  
 1715' -AGATTACCTTTCTTGATAGATGTGTACAGAACCTTATGCTAATCAGAT-TGTAAAAAGAG  
 \* \* \* \* \*  
 1407" TAGATTTTCTAGCATGTATGAAAAAATACAGGACTTAT--TTACCATATGAGGATATTAA

FIG. 32A

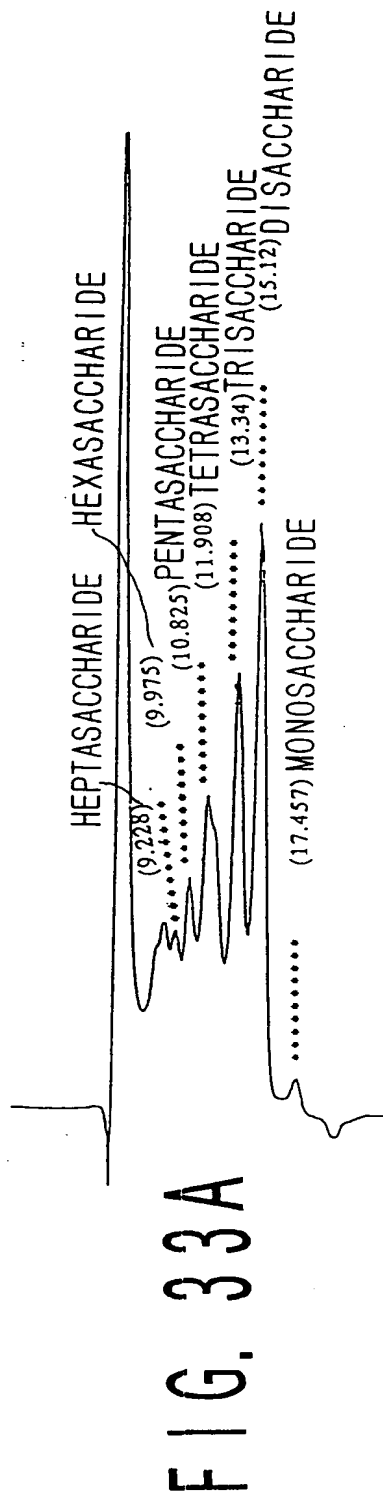


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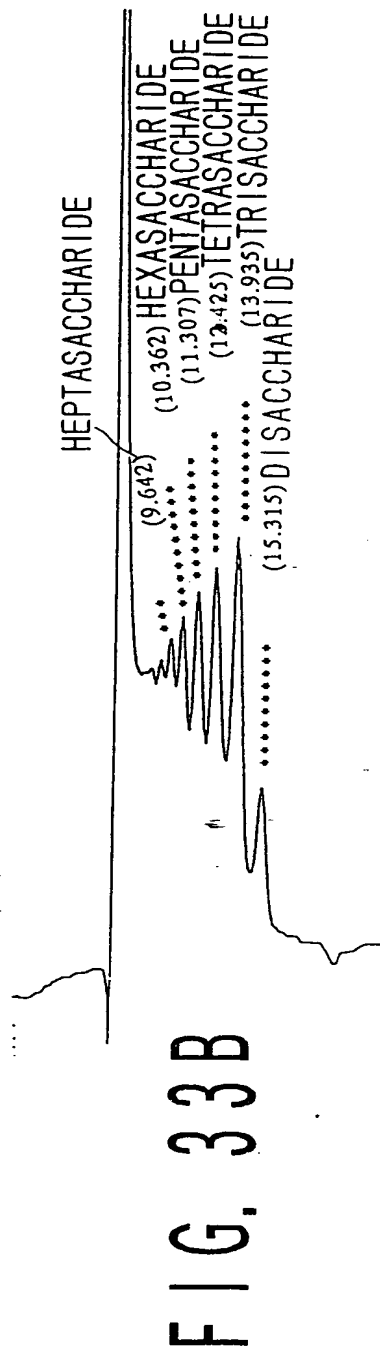
1773' TGTGATAAGACCAATGAGATAGAGGAAGCAACCAAAAGAAATCCAGAGGCTTATACTAAA  
 \* \* \* \* \*  
 1465" CGGAATAAG-GGAATGCGATA-AGGAGGGAAAGTTAAAAGATGAAAAGGGGAATCATGAGA  
 1833' TTACAACAATATATGCCAGCAGTATACGCTAAAGCTTATGAAGATACTTTCTCTTTAGA  
 \* \* \* \* \*  
 1523" CTCCAACAATACATGCCAGCAATCTTCGCTAAGGGCTATGAGGATACTACCCCTCTTCATC  
 1893' TACAATAGATTAATATCCATAAATGAGGTTGGAAGCGATTTACGATATTATAAGATATCG  
 \* \* \* \* \*  
 1583" TACAATAGATTAATTTCCCTTAACGAGGTTGGGAGCGACCTAAGA-AGATTCAAGTTTAAG  
 1953' CCT-GATCAGTTTCATGTATTTAATCAAAAACGAAGAGGAAAAATCACACTAAATGCCAC  
 \* \* \* \* \*  
 1642" CATCAAAGACTTTTCATAACTTTAACCTAAGCAGAGTAAATACCATATCAATGAACACTCT  
 2012' TAGCACACATGATACTAAGTTTGTAGTGAAGATGTAAGGATGAAAATAAGTGTTAAGTGA  
 \* \* \* \* \*  
 1702" TTCCAATCATGATACTAAATTCAGTGAAGACGTTAGAGCTAGAATATCAGTACTATCTGA  
 2072' ATTTCTGAAGAATGGAAAAATAAGGTCGAGGAATGGCAGTATCATAAATCCAAAGGT  
 \* \* \* \* \*  
 1762" GATACCAAAGGAGTGGGAGGAGGGTAATATACTGGCATGATTTGTTAAGGCCAAATAT  
 2132' ATCAAGAAATGATGAATATAGATATTATCAGGTTTTAGTGGGAAGTTTTATGAGGGATT  
 \* \* \* \* \*  
 1822" TGATAAAAACGATGAGTATAGATTTTATCAAACACTTGTGGGAAG---TTACGAGGGATT  
 2192' CTCTAATGATTTTAAGGAGAGAATAAAGCAACATATGATAAAAAAGTGCAGAGAAGCTAA  
 \* \* \* \* \*  
 1879" ----T--GATAATAAGGAGAGAATTAAGAACCATATGATTAAGGTCATAAGAGAAGCTAA  
 2252' GATAAATACCTCATGGAGAAATCAAAATAAAGAATATGAAAATAGAGTAATGGAATTAGT  
 \* \* \* \* \*  
 1933" GGTACATACAACGTGGGAAAAATCCTAATATAGAGTATGAAAAGAAGGTTCTGGGTTTCAT  
 2312' GGAAGAAACTTTTACCAATAAGGATTTTATTAAGTTTTCATGAAATTTGAAAGTAAGAT  
 \* \* \* \* \*  
 1993" AGATGAAGTGTTTCGAGAACAGTAATTTTAGAAATGATTTTGAAATTTTGAAAGAAAAT  
 2372' AAGAAGGATAGGGATGATTAAGAGCTTATCCTTGGTCGCATTAAAAATTATGTGAGCCGG  
 \* \* \* \* \*  
 2053" AGTTTATTTTCGGTTATATGAAATCATTAATCGCAACGACACTTAGGTTCTTTTCGCCCGG  
 2432' TATACCTGATTTTTATCAGGGAACAGAAATATGGCGATTTTACTTACAGATCCAGATAA  
 \* \* \* \* \*  
 2113" TGTACCAGATTTTATCAAGGAACCTGAAGTTTGGAGATTCTTACTTACAGACCCAGATAA  
 2492' CAGAGTCCCAAGTGGATTTTAAAGAAATTAACGAAATATTAGAAAAATCCAAAAATTTGA  
 \* \* \* \* \*  
 2173" CAGAATGCCGGTGGATTTCAAGAACTAAAGGAATTATTAATAATTTGACTGAAAAAGAA  
 2552' AAAAAATATGTTAGAGTCTATGGAC--GATGGAAGA-ATTAAGATGTATTTAACATATAA  
 \* \* \* \* \*  
 2233" CTTAGAACTCTCAGATCCAAGAGTCAAATGTTATATGTTAAGAAAT-TGCTACAGCTTA  
 2609' GCTTTTATCCCTAAGAAAAAGGTTGGCTGAGGATTTTAAAGGGCGAGTATAAGGG---  
 \* \* \* \* \*  
 2292" GAAGAGAGTACTCACTAAACGATT--ATAAACCATTGCCCTTTGGCTTCCAAAGGGGAAA  
 2656' ATTAGATCTAGAAGAAGGACTATGTGGGTTTA-TTAGGTTTAACAAAATTTTGGTAATAA  
 \* \* \* \* \*  
 2350" AGTAGCTGTCTTTTCTACCAATAGTACTAGGGAGGTTAAAGAGAAAATTAGT-ATAA  
 2725' TAAAAACCAAGGGAAGTGTTAATTACAAACTGAACTTGAAGAGGGAGCAATTTACACAG  
 \* \* \* \* \*  
 2409" GGCAAA-AAAGCGTTGATTGGATCAGAAATGAGGAAATAGTAGTGGAAGT---ACAA  
 2785' ATGTATTGACAGGAGAAGAAATTAAAAAAGAGGTACAGATTAATGAGCTACCTAGGATAC  
 \* \* \* \* \*  
 2464" TTTAAGTGAGTTGATTGGGAAGCATAAAGTCGTTATA-TTAAGTAAAAAAGGGAG

FIG. 32B

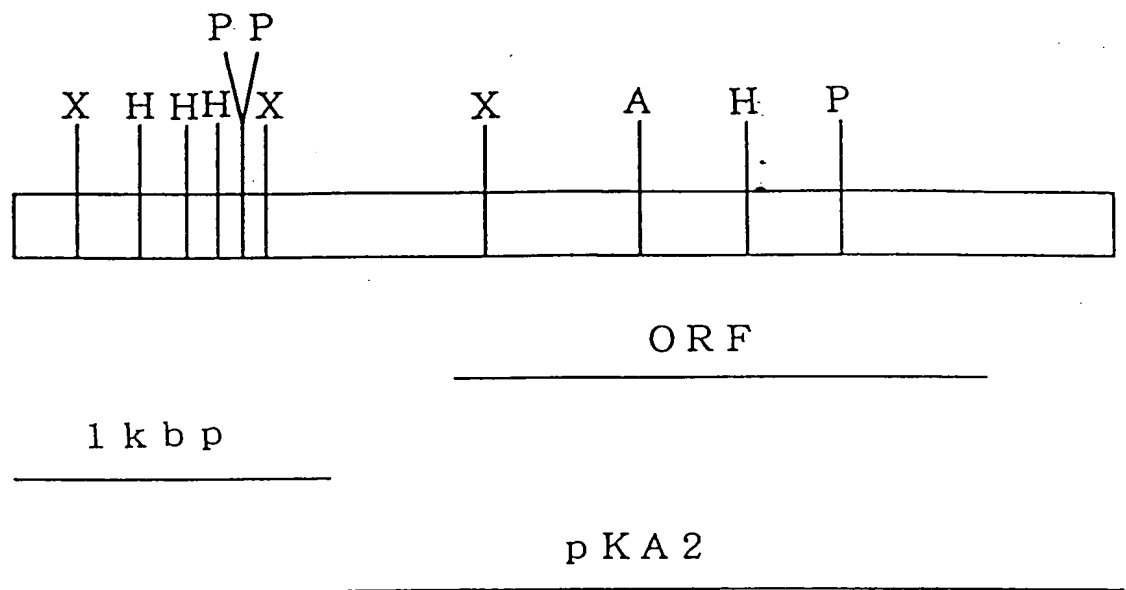
# IN THE PRESENCE OF THE ENZYME



CONTROL



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A : A c c I  
H : H i n c I I  
P : P s t I  
X : X b a I

FIG. 34

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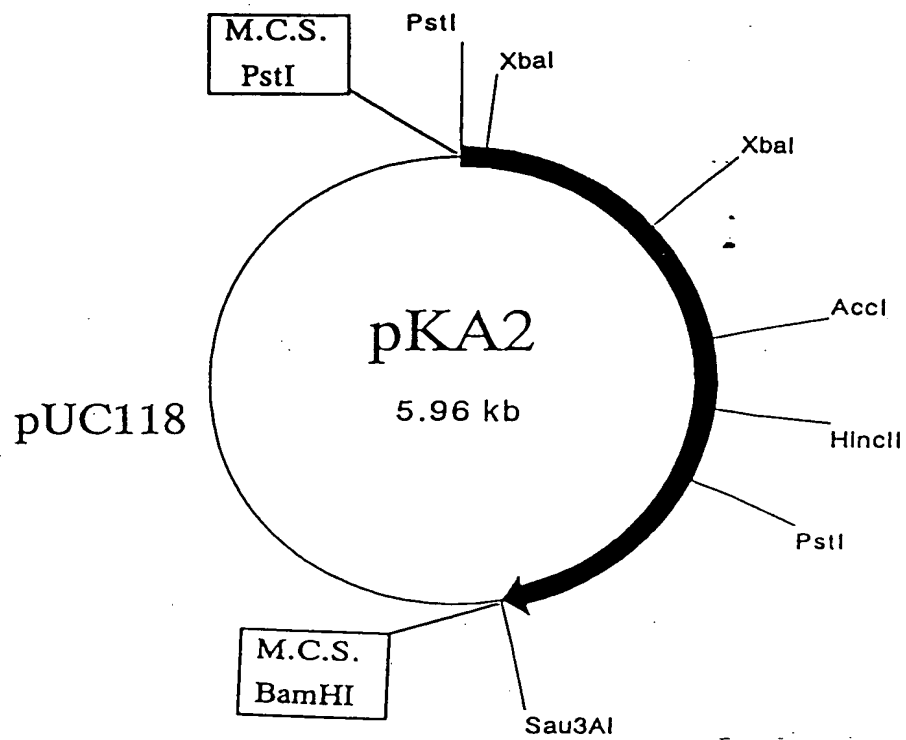


FIG. 35

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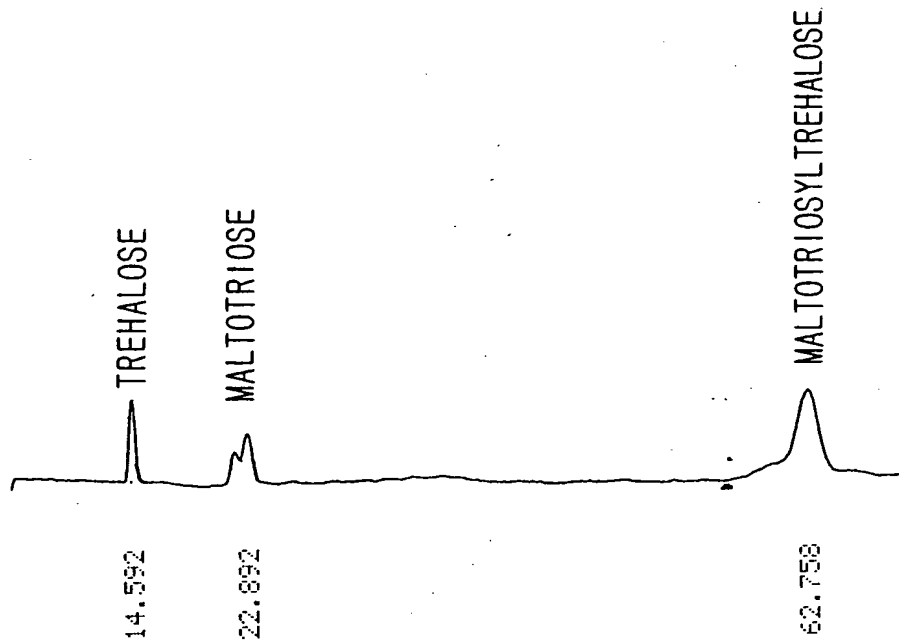


FIG. 36A

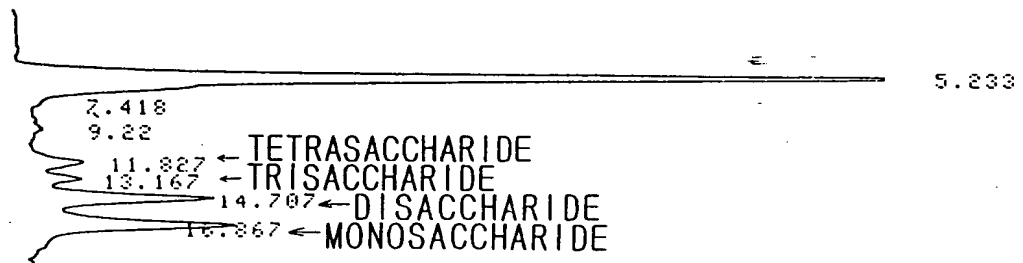


FIG. 36B

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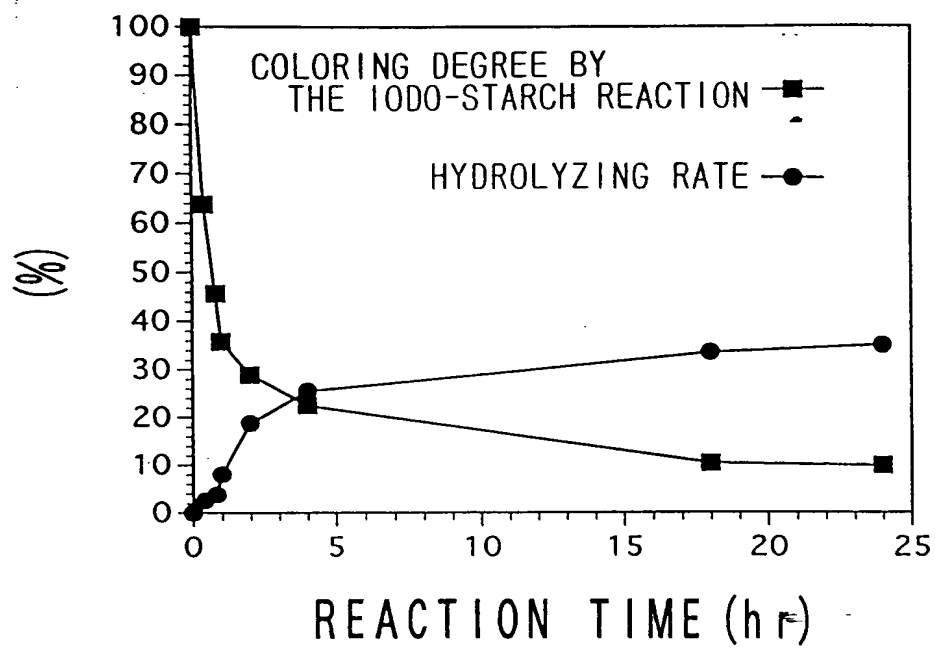


FIG. 37

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p09A1 INSERTED FRAGMENT

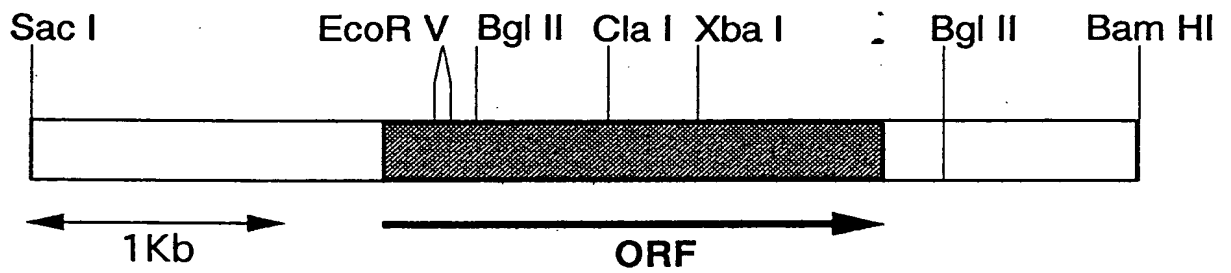


FIG. 38

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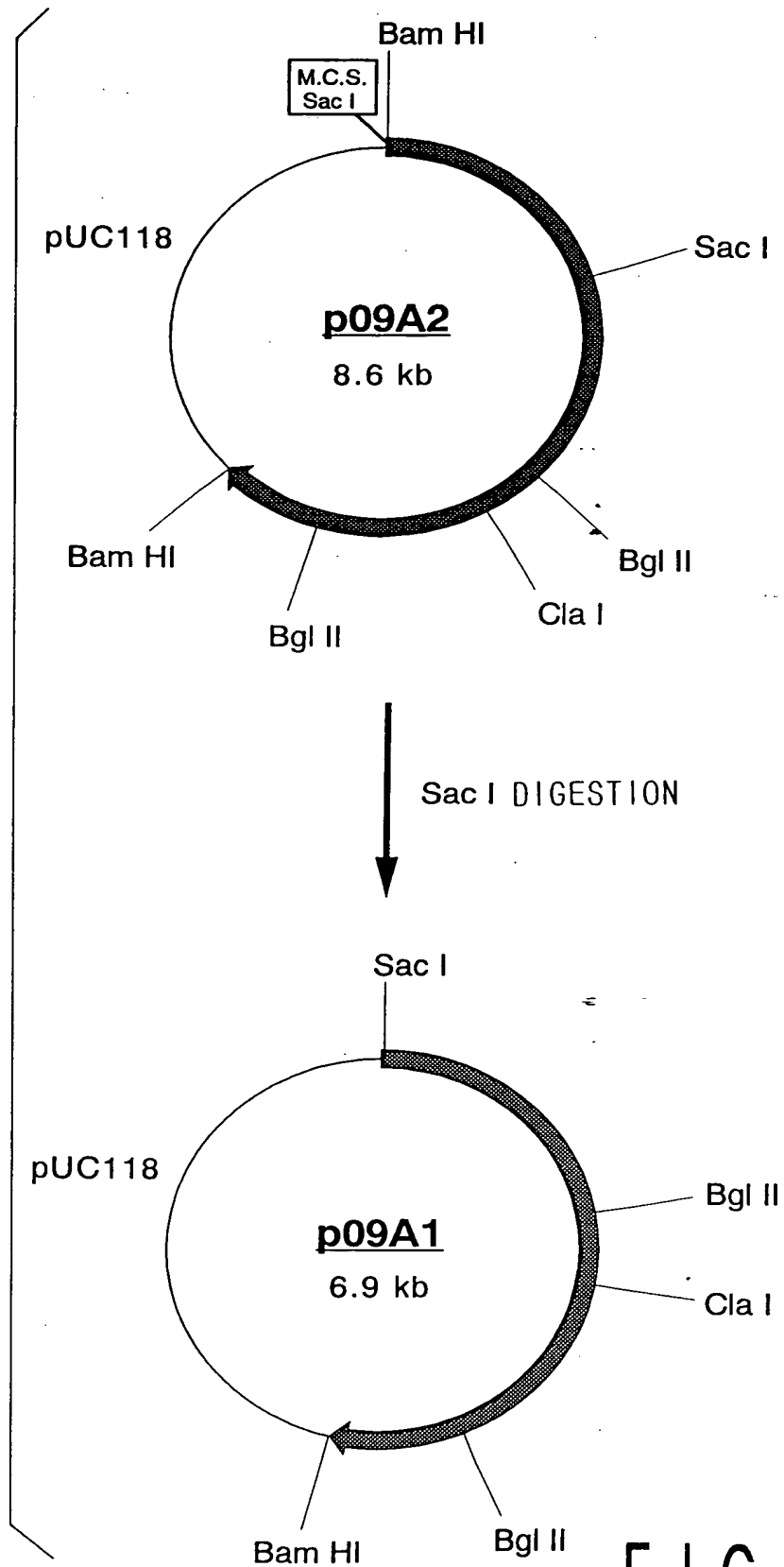


FIG. 39



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1' MFSFGNIEKNKGIFKLWAPYVNSVKLK-LSKKLIPMEKNDEGFFEVEIDDIEENLTYSY  
\* \* \* \* \*  
1" TFAYKIDGNEVIFTLWAPYQSVKLVLEKGLYEMERDEKGYFTITLNNVKVRDRYKY  
60' IIEDKREIPDPASRYQPLGVHDKSQLIRTDYQILDGLGVKIEDLIYELHVGTFSEQGNF  
\* \* \* \* \*  
59" VLDDASEIPDPASRYQPEGVHGPSQIIQESKEFNNETFLKKEDLIIEYIHHVGTFTPEGTF  
120' KGVIEKLDYLDLKITGIELMPVAQFPGNRDWGYDGVFLYAVQNTYGGPWELAKLVNEAH  
\* \* \* \* \*  
119" EGVIRKLDYLDLKITGITAIEIMPIAQFPGKRDWGYDGVLYAVQNSYGGPEGFRKLVDIAH  
180' KRGIAVILDVYVNHIGPEGNYLLGLGPYFSDRYKTPWGLTFNFDGDCDQVRKFILENVE  
\* \* \* \* \*  
179" KKGGLGVILDVYVNHIGPEGNYMVKLGYPYFSQYKTPWGLTFNFDGDAESDEVRKFILENVE  
240' YWFKTFKIDGLRLDAVHAIFDNSPKHILQEIAEKAHQLGKFVIAESDLNDPKIV--KDDC  
\* \* \* \* \*  
239" YWIKYENVDFGLRLDAVHAIIDTSPKHILEEIAVHVHKNRIVIAESDLNDPRVVPKEKC  
298' GYKIDAQWVDDFHHAHVAFITKEKDYQQDFGRIEDIEKTFKDVVYDGYKYSRYRGRTHG  
\* \* \* \* \*  
299" GYNIDAQWVDDFHHSIHAYLTGERQGYTDFGNLDDIVKSYKDVVYDGYKSNFRKTHG  
358' APVGDLPFRKFVVFIONHDQVGNRGNGERLSILTDKTTYLMAATLYILSPYIPLIFMGEE  
\* \* \* \* \*  
359" EPVGELDGCNFVYVYIONHDQVGNRGKGERIILVDRESYKIAAALYLLSPYIPMIFMGEE  
418' YYETNPFFFFSDFSDPVLKGVREGRLKENNQIDPQSEEAFLKSKLSWKIDEEVLDYYK  
\* \* \* \* \*  
419" YGEENPFYFFSDFSDSKLIQGVREGGRKKENGQDTPQDESTFNASKLSWKIDEEIFSFKY  
478' QLINIRKRYN-NCKRVKEVRREGNCITLIMEKIGIIASFDDIVINSKITGNLLIGI--GF  
\* \* \* \* \*  
479" ILIKMRKELSIACDRRVNVNGENWLIIGREYFSLYVFSKSSIEVKYSGTLLSSNSNF  
535' PKKLKKDELIKVNRRGVGVYQLE  
\* \* \* \* \*  
539" PQHIEEGK-YEFDKGFALYKL

FIG. 40

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1176' ATGTTTTCGTTCGGTGAAAATATTGAAAAAATAAAGGTATCTTTAAGTTATGGGCACCT  
 642" ACGTTTGCTTATAAAATAGATGGAAATGAGGTAATCTTTACCTTATGGGCACCT

1236' TATGTTAATAGTGTTAAGCTGAA-GTT--AAGCAAAAACTTATTCCAATGGAAAAAAC  
 696" TATCAAAAGAGCGTTAAACTAAAGGTTCTAGAGAAGGGACTTTACGAAATGGAAAGAGAT

1293' GATGAGGGATTTTTCGAAGTAGAAATAGACGATATCGAGGAAATTTAACCTATTCTTAT  
 756" GAAAAAGGTTACTTCACCATTACCTTAAACAACGTAAAGGTTAGAGATAGGTATAAATAC

1353' ATTATAGAAGATAAGAGAGAGATACCTGATCCCGCATCAGATATCAACCTTTAGGAGTT  
 816" GTTTTAGATGATGCTAGTGAAATACCAGATCCAGCATCCAGATACCAACCAGAAAGGTGTA

1413' CATGACAAATCAAACTTATAAGAACAGATTATCAGATTCTTGACCTTGGAAAAGTAAAA  
 876" CATGGGCCTTCAAAATTATACAAGAAAGTAAAGAGTTCAACAACGAGACTTTTCTGAAG

1473' ATAGAAGATCTAATAATATATGAACTCCACGTTGGTACTTTTTCCCAAGAAGGAAATTTTC  
 936" AAAGAGGACTTGATAATTTATGAAATACACGTGGGGACTTTCACTCCAGAGGGAACGTTT

1533' AAAGGAGTAATGAAAAAGTTAGATTACCTCAAGGATCTAGGAATCACAG6AATTGAACTG  
 996" GAGGGAGTGATAAGGAAACTTGACTACTTAAAGGATTTGGGAATTACGGCAATAGAGATA

1593 ATGCCTGTGGCACAATTTCCAGGGAATAGAGATTGGGGATACGATGGTGTTTTTCTATAC  
 1056" ATGCCAATAGCTCAATTTCTCGGAAAAAGGATTGGGGTTATGATGGAGTTTATTTATAT

1653' GCAGTTCAAAATACTTATGGCGGACCATGGGAATTGGCTAAGCTAGTAAACGAGGCACAT  
 1116" GCAGTACAGAACTCTTACGGAGGGCCAGAAAGGTTTTAGAAAGTTAGTTGATGAAGCGCAC

1713' AAAAGGGGAATAGCCGTAATTTTGGATGTTGTATATAATCATATAGGTCCTGAGGGAAAT  
 1176" AAGAAAGGTTTAGGAGTTATTTTAGACGTAGTATACAACCACGTTGGACCAGAGGGAAC

1773' TACCTTTTAGGATTAGGTCCTTATTTTTCAGACAGATATAAACTCCATGGGGATTAAACA  
 1236" TATATGGTTAAATTGGGGCCATTTTCTCAGAAATACAAAACGCCATGGGGATTAAACC

1833' TTTAATTTTGATGATAGGGGATGTGATCAAGTTAGAAAATTCATTTTAGAAAATGTCGAG  
 1296" TTTAATTTTGACGATGCTGAAAGCGATGAGGTTAGGAAGTTCATCTTAGAAAACGTTGAG

1893' TATTGGTTTAAGACCTTTAAATCGATGGTCTGAGACTGGATGCAGTTTCATGCAATTTTT  
 1356" TACTGGATTAAGGAATATAACGTTGATGGGTTTAGATTAGATGCGGTTTCATGCAATTATT

1953' GATAATTCGCTTAAGCATATCCTCCAAGAGATAGCTGAAAAAGCCCATCAATTAGGAAAA  
 1416" GACACTTCTCCTAAGCACATCTTGGAGGAAATAGCTGACGTTGTGCATAAGTATAATAGG

2013' TTTGTTATTGCTGAAAGTGATTTAAATGATCCAAAAATAG-TAA-----AAGATGATTGT  
 1476" ATTGTCATAGCCGAAAGTGATTTAAACGATCCTAGAGTCGTTAATCCCAAGGAAAAAGTG

2067' GGATATAAAATAGATGCTCAATGGGTTGACGATTTCCACCACGCAGTTTCATGCATTCTATA  
 1536" GGATATAATATTGATGCTCAATGGGTTGACGATTTCCATCATTCTATTACGCTTACTTA

2127' ACAAAGAAAAAGATTATTATACCAGGATTTTGAAGGATAGAAGATATAGAGAAAACT  
 1596" ACTGGTGAGAGGCAAGGCTATTATACGGATTTTCGGTAACCTTGACGATATAGTTAAATCG

FIG. 41A

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2187' TTTAAAGATGTTTTTGTATTATGATGGAAAGTATTCTAGATACAGAGGAAGAACTCATGGT  
\* \* \* \* \*  
1656" TATAAGGACGTTTTTCGTATATGATGGTAAGTACTCCAATTTTAGAAGAAAACTCACGGA  
2247' GCTCCTGTAGGTGATCTTCCACCACGTAAATTTGTAGTCTTCATACAAAATCACGATCAA  
\* \* \* \* \*  
1716" GAACCAAGTTGGTGAAGTACGCGATGCAATTTCTAGTATTATACAAAATCACGATCAA  
2307' GTAGGAAATAGAGGAAATGGGAAAGACTTTCCATATTAACCGATAAAACGACATACCTT  
\* \* \* \* \*  
1776" GTCGGAAATAGAGGCAAAGGTGAAAGAATAATTAAATTAGTCGATAGGGAAAGCTACAAG  
2367' ATGGCAGCCACACTATATACTCTCACCGTATATACCGCTAATTTATGGGCGAGGAA  
\* \* \* \* \*  
1836" ATCGCTGCAGCCCTTACCTTCTTTCCCTATATTCCAATGATTTTCATGGGAGAGGAA  
2427' TATTATGAGACGAATCCTTTTTCTTCTCTGATTTCTCAGATCCCGTATTAATTAAG  
\* \* \* \* \*  
1896" TACGGTGAGGAAATCCCTTTTATTTCTTTCTGATTTTTCAGATTCAAACCTGATACAA  
2487' GGTGTTAGAGAAGGTAGACTAAAGGAAAAATCAAATGATAGATCCACAATCTGAGGAA  
\* \* \* \* \*  
1956" GGTGTAAGGGAAGGGAGAAAAAAGGAAAAACGGGCAAGATACTGACCTCAAGTGAATCA  
2547' GCGTCTTAAAGAGT--AACTTTTCATGGAAAAATTGATGAGGAAGTTTATGATTATTATA  
\* \* \* \* \*  
2016" AC--TTTTAACGCTTCCAACTGAGTTGGAAGATTGACGAGGAAATCTTTTCATTTTACA  
2605' AACAACTGATAAATATCAGAAA-GAGAT-ATAATA-ATTGTAAAAGGGTAAAGGAAGTTA  
\* \* \* \* \*  
2074" AGATTTTAATAAAAAATGAGAAAGGAGTTGAGCATAGCGTGTGATAGGAGAGTAAACGTCG  
2662' GGAGAGAAGGGAAGTATTACTTTGATCATGGAAAAAATAGGAATAATTGCATCGTTTG  
\* \* \* \* \*  
2134" TGAATGGCGAAAAATTGGTTGATCATCAAGG-GAAGAGAATACTTTTCACTCTACGTTTTT  
2722' ATGATATTGT-AATTAATTCTAAAAATTACAGGTAAATTTACTTATAGGCATAGGATTTCCG  
\* \* \* \* \*  
2193" TCTAAATCATCTATTGAAGTTAAGTACAGTGGAACCTTTACTTTTGTCTCAAAATAATTCA  
2781' AAAAAATTGAAAAAAGATGAA--TTAAT-TAAGGTAAACAGAGGTGTTGGGTATATCAA  
\* \* \* \* \*  
2253" TTCCCTCAGCATATTGAAGAAGGTAAATATGAGTTTGATAAGGGATTTGCTTTATATAAA  
2838' TTAGAA  
\*  
2313" CTT

FIG. 41B

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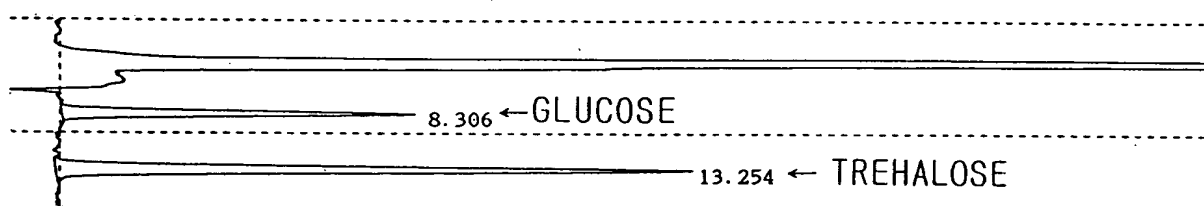


FIG. 42